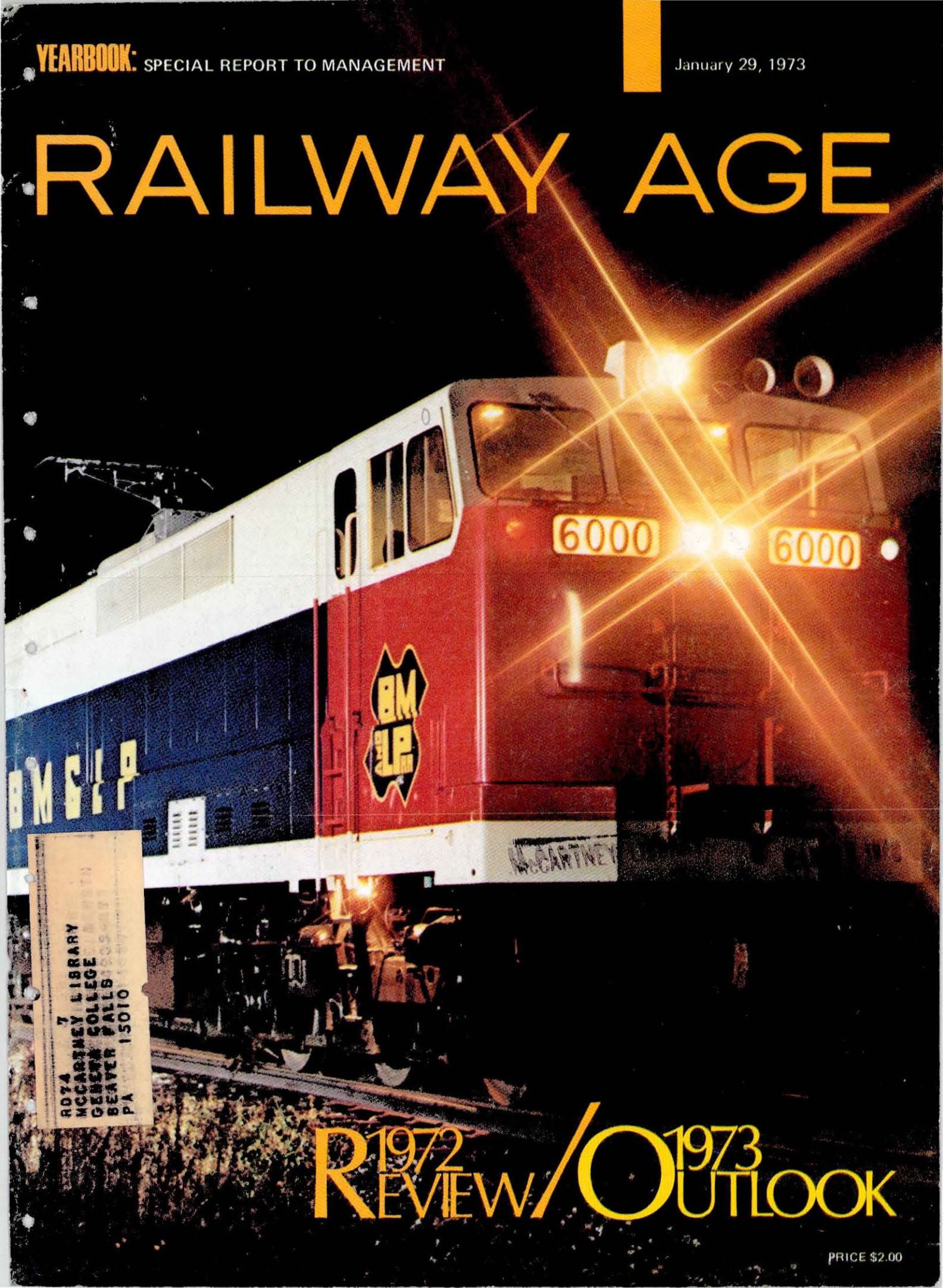
YEARBOOK: SPECIAL REPORT TO MANAGEMENT

January 29, 1973

RAILWAY AGE



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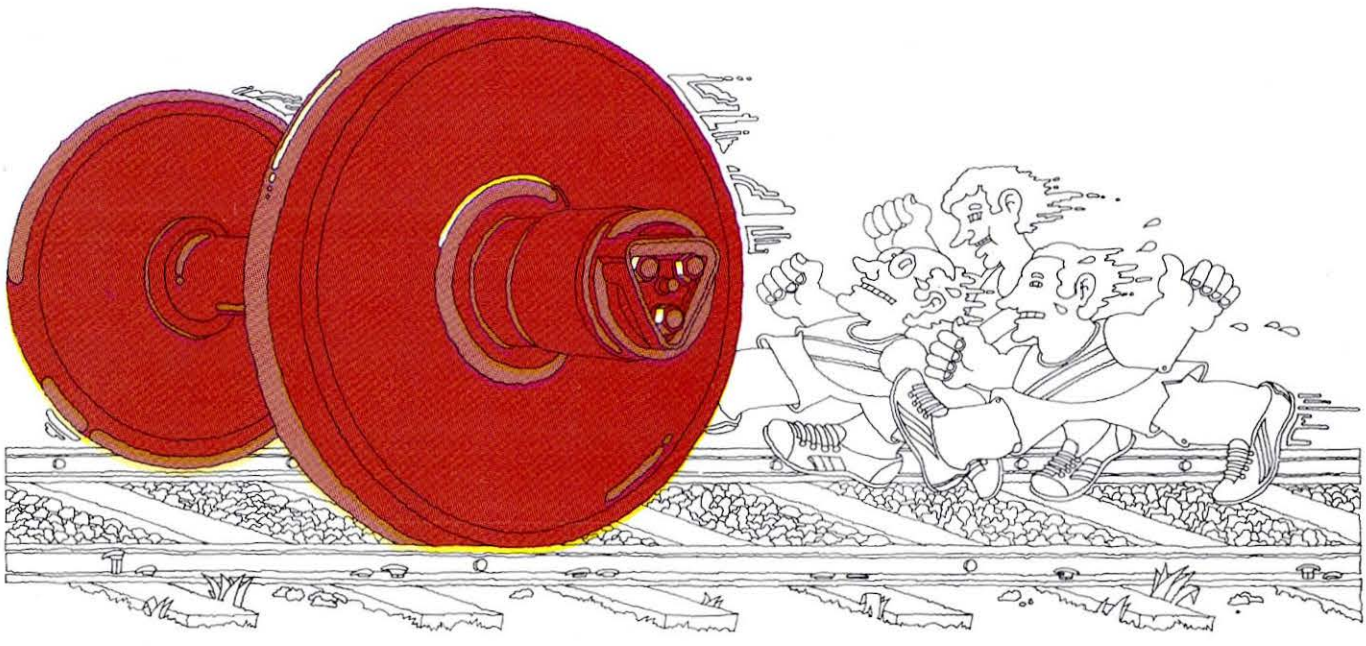

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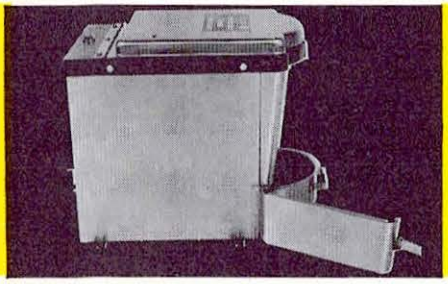

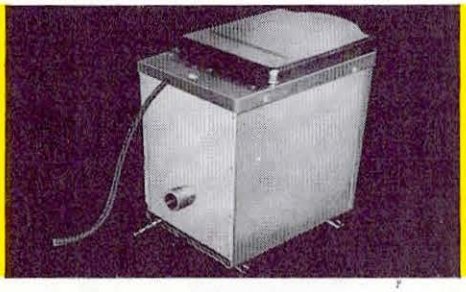

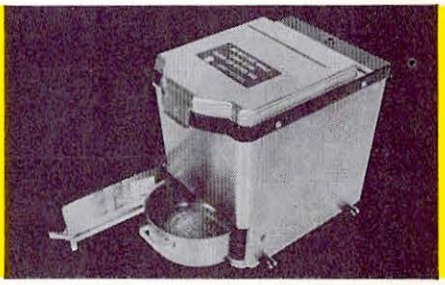

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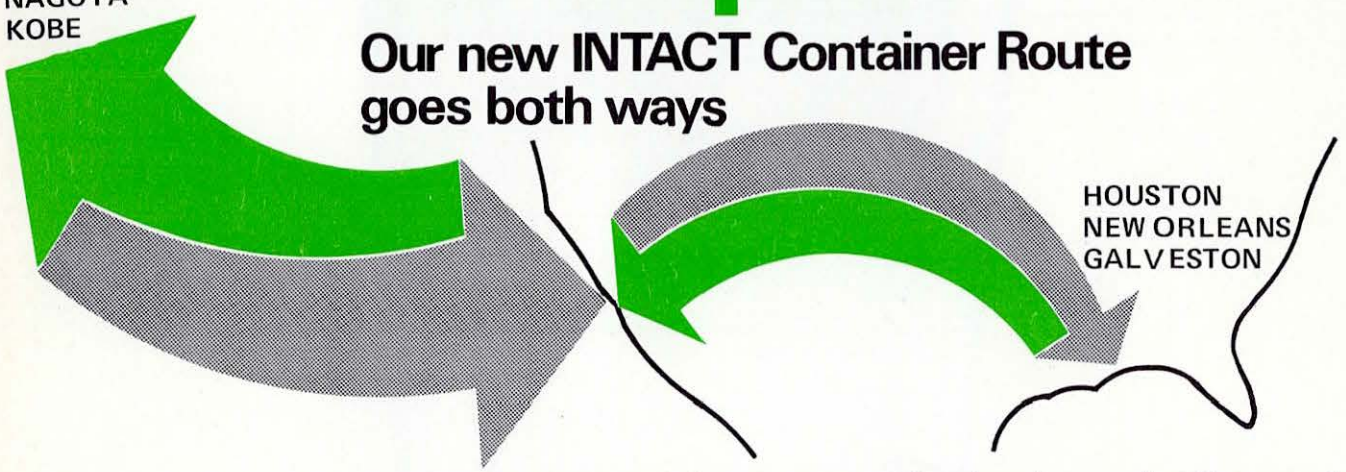

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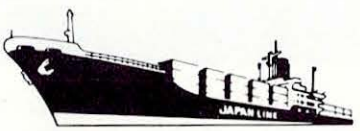

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Inside

LUTHER MILLER

TWO WORD TO REMEMBER

When proofreaders get tired, or go home early, a certain madness seems to strike the print media—and this happened to the Journal of Commerce when, on Jan. 12, it quoted FRA Administrator John W. Ingram as saying, "Eventually, the U.S. rail system is going to be nationalized. . ."

The word that Mr. Ingram actually used, in a speech at the University of Colorado on Jan. 10, was "rationalized." There is a difference. As every disciple of Webster's knows, rationalize means "to make conformable with rational principles." Nationalize doesn't.

There is already too much ill-informed sentiment for railroad nationalization abroad in the land; the proofreader's slip was therefore a traumatic one for railroad readers of the JofC.

"Rationalization" succinctly summarizes a large part of the challenge which confronts railroads in 1973. The railroad plant must be rationalized: this could mean, as Mr. Ingram suggested, the scrapping of 21,000 miles of track which, he pointed out, represents 10% of all railroad mileage but accounts for only one-half of 1% of all revenues.

Another word-to-remember in this watershed year for railroads is "productivity." In suggesting (p. 27) that productivity can unlock the future of railroads, we are talking not only about capital or labor productivity, but also about "service improvement, more runthrough and unit-train operations, more equipment and better utilization of it, less damage to customers' shipments, stepped-up maintenance of track and other fixed plant, better terminal operations. . ."

"Progress through Productivity" is, in fact, so very vital to our industry that Railway Age has chosen it as the theme for a series of articles that will be appearing this year. Only with greater across-the-board productivity, coupled with rationalization of the plant, can we avert the ultimate diseconomy of nationalization.

ELECTRIFICATION REVISITED

The article carried the headline, "What Railroads Are Doing With Electric Traction." It said, among other things: "Foreign railroads have been much more active than American in adopting electric traction during the past year, but activity and interest in this country are increasing." The author was A.G. Oehler—and the article appeared in Railway Age's Review and Outlook Issue 50 years ago, Jan. 6, 1923. Al Oehler died last year, at 83, his hopes for a largely-electrified U.S. railway system still largely unfulfilled.

But change may be, at last, in the wind. Says Mechanical Editor Fred Houser: "The reasons Al predicted electrification—limitations on grade and tunnel operation imposed by steam traction—are no longer valid. There are today a whole new set of economic incentives." Some of these incentives are described by Houser in the story beginning on p. 35.

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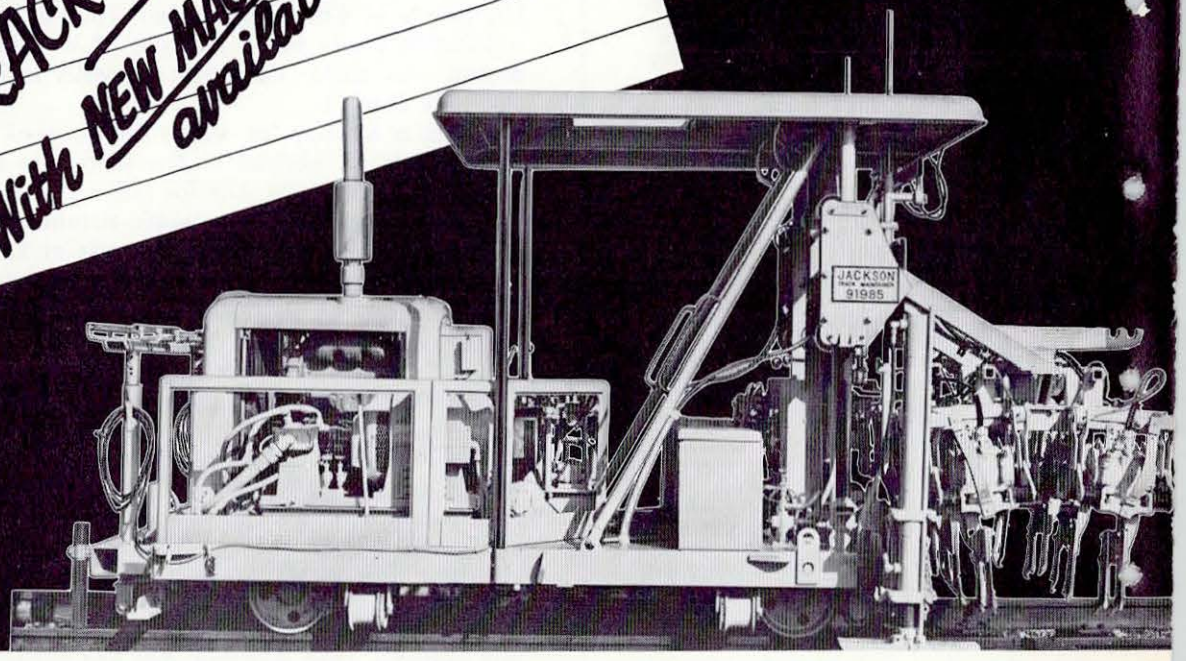

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RAILWAY AGE

JANUARY 29, 1973

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General Electric's E60, built for Arizona's Black Mesa & Lake Powell Railroad, was photographed on GE's Erie, Pa., test track by Harold (Bud) Seib.

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Short and Significant

CAPITAL SPENDING FORECAST BULLISH

Railroad capital spending could soar to near $2 billion in 1973, up 10.4% over 1972 levels, according to U.S. Department of Commerce surveys conducted in November and December. In October, Commerce had predicted a $1.81-billion level for rail capital expenditure in 1972. (Commerce's estimates include actual outlays by Class I railroads, plus leased and private carline equipment.) The new surveys forecast dramatic 1973 increases in capital spending for most industries, with all outlays totaling $100 billion, a strong 13% increase over 1972's $88.5-billion level.

WAGE DEMANDS: WHAT'S A "RESTRAINT"?

In the days after Jan. 1, the United Transportation Union served notice on the railroads for a 15% wage increase effective July 1 and another 15% boost effective July 1, 1974. UTU proposed no rules changes. Other unions, however, were less modest. Five shopcrafts asked for 15%, too, in '73 and in '74; the Clerks asked for 12% and 12%, also on a two-year basis; the Signalmen called for 10% and 10%, plus four separate 2% increases for skilled employees. But, all of these non-operating unions also demanded a handsome package of fringers, covering vacations, holidays, a cost-of-living adjustment, shift differentials, increased overtime rates, and longevity pay. And the Clerks included a comprehensive package under the label of guaranteed annual wage and employment security. Meanwhile, National Railway Labor Conference Chairman William H. Dempsey and AAR Executive Vice President Gregory S. Prince had a comment on the Administration's Phase 3 economic program: "As we understand the President's program, it is intended that the conduct of private parties voluntarily conform to the standards, but that if the conduct does not the Federal government will retain the power and the responsibility to step in. . .accordingly we see no reason why the new program should have any material bearing on the upcoming wage negotiations in the railroad industry. If both sides bargain in good faith, to stay within the standards prescribed, the only consequence of the new program will be the beneficial one of accomplishing the goal voluntarily instead of by government fiat."

MAINTENANCE OUTLAYS RISE BY $106 MILLION

One factor contributing to increased car utilization has been the rising rate of expenditures for maintenance of way and equipment, says R.R. Manion, the AAR's vice president of operations and maintenance. For the first nine months of 1972, Manion told the ICC in a quarterly report, maintenance outlays rose by $106 million to $2.6 billion, up 4.2% from the comparable 1971 period.

WHITE HOUSE TO URGE CONVERSION TO COAL

President Nixon will soon call for conversion of a large number of U.S. electric-power plants from oil-fired to coal-fired generating units in an effort to ease the nation's energy crisis, say Administration sources. The Presidential recommendation will be made in a forthcoming message to Congress on the energy problem. Under the plan, coal will fill the gap between now and 1985, when improved technology for atomic power, geothermal, and coal conversion processes come into use.

CP RAIL SEES TRAFFIC UPTURN

Canadian Pacific Chairman Ian D. Sinclair says CP Rail freight revenues in 1973 "are expected to rise significantly above 1972 levels," with major growth anticipated in export coal, potash, automobiles, pool cars and containers. "Marketing efforts in 1973 will be aimed at implementing more intermodal systems and improving the railway's market share of commodities sensitive to trucking competition and energy-related commodities such as coal, petroleum and liquefied petroleum gases," says Sinclair.

BN PLANNING URBAN IMPROVEMENTS

New York has its World Trade Center—and Seattle may get a Pacific Trade Center, with Burlington Northern as the moving force. BN is going through the required preliminaries now, and plans eventual construction of twin 16-story towers on top of street-level retail and service shops and several floors of public parking. The office structures would house BN's regional headquarters and offices of other companies engaged in international commerce. The whole complex is described as "one of several major urban improvement programs planned for key BN cities."

For the record

New York's Metropolitan Transportation Authority has ordered 752 R-46 cars from Pullman-Standard for service on the New York City Transit Authority. St. Louis Car Division of General Steel Industries, meanwhile, is completing work on 108 R-44 cars previously ordered by MTA. Through an error in collating, it was erroneously reported in the Jan. 8 issue of Railway Age that St. Louis Car had a backlog of 860 cars on order from MTA for service on NYCTA.

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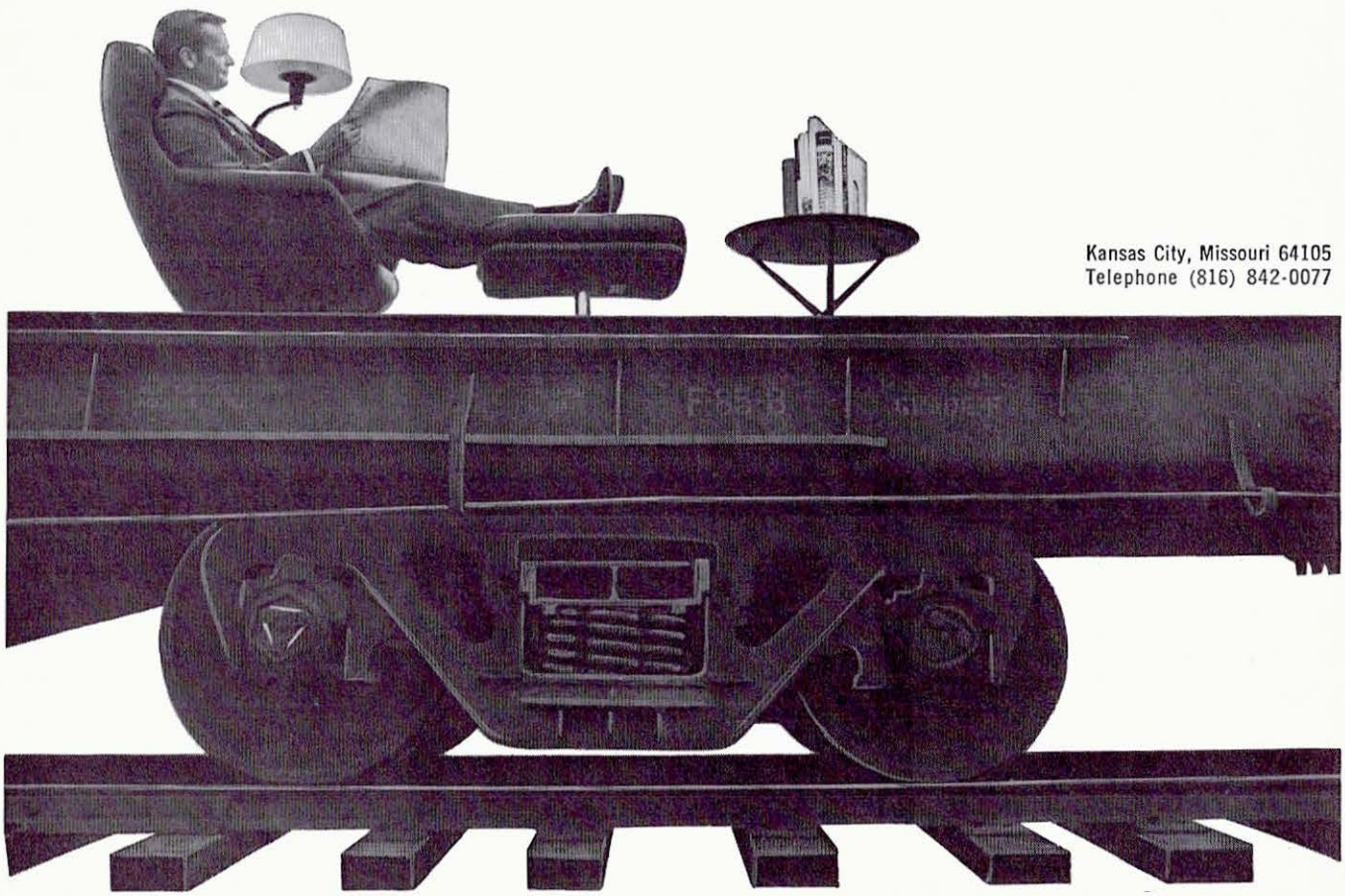

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RAILWAY AGE
NEWS

Fuel shortage threatens to slow railroads

A mid-January warmup across much of the nation may have spared the railroad industry—at least for a while—from the effects of the diesel-fuel shortage, which was threatening to become critical.

Even that period of warm-up and sunny skies, however, failed to take away the chill felt by operating officers as they watched fuel supplies dwindle—and as they got word from suppliers that fuel deliveries would be cut. Speed reductions and service reductions to conserve fuel were being planned—and in some cases were being placed in effect. And a number of observers were increasingly concerned that the shortage was not a one-shot, caused by a unique combination of circumstances, but rather a problem that could well become chronic.

Suppliers were moving in a number of ways. Some said deliveries would be reduced on a percentage basis, with at least one major supplier notifying railroads of a 20% cut. Others indicated that deliveries would be based on 1972 delivery levels, but with increased rail traffic in January 1973—due in part to export grain movements—this method of allocation also meant that railroads would be facing a fuel pinch.

Railroads had only a couple of options. Operating cutbacks could be instituted. Employees could be encouraged to use more care in fueling locomotives to prevent wasteful spills. Fuel supplies could be juggled, and at least one road placed extra tank cars in service to haul fuel from points where it could be obtained to points where it was in short supply.

As the shortage was developing, railroads were working together to try to develop ways of meeting the problem. The industry was also working with government agencies, specifically FRA, ICC and Office of Emergency Preparedness, in a search for solutions. Locomotive manufacturers were also concerned with programs to reduce fuel consumption—and there were indications that the common and advisable practice of keeping a diesel idling would come under even closer scrutiny.

Railroads are, of course, close to the top in markets for the kind of fuel which is running short. In 1971, the industry bought 8.9% of all distillate fuel oil sold in the U.S. Only the home-heating and diesel-highway-vehicle markets accounted for larger purchases. In 1969, last year for which detailed dollar figures are available, railroads spent more than $417 million for diesel fuel—or about 25% of the total expenditure that year for all fuel, material and supplies.

On an individual-road basis, the figures are no less impressive. Burlington Northern, for example, looked at its situation a few months ago and came up with these figures: A 2,160-unit diesel-electric fleet rated at more than 4.3-million hp and operating over more than 25,000 miles of road, requires close to 340 million gallons and runs up an annual fuel bill of more than $30 million. To put it another way, BN figures that for all the transportation service it performs it has fuel requirements about one-third those of the entire U.S. Navy. System-wide, BN has 110 fueling stations and was getting direct local delivery, tank-truck-to-locomotive at 45 points. With daily fuel requirements averaging 890,000 gallons, the road was using a variety of transport modes—tank cars, tank trucks, pipelines, and barges—to keep the fuel tanks full.

The January thaw helped—but the problem remains one of great concern to carriers.

In early 1973, while railroads—along with other distillate fuel-oil users—were suffering, a wide range of causes for the shortage was being cited. On the list:

—The energy crunch, pure and simple.

—A colder-than-average winter in many parts of the country. One Chicago-area supplier, for instance, said heating-oil deliveries were about 25% higher in the last four months of 1972 than in the comparable period in 1971.

—Increased demand for gasoline last year, which played a part in preventing producers and suppliers from building up oil inventories during 1972's summer months.

—Environmental concerns which have affected some planning for expansion of energy sources ranging from strip mines to nuclear power plants.

—Political and economic problems related to the import of more oil. (OEP did take action to increase imports from the Virgin Islands, but the impact of this government decision remained to be measured.)

—Switchover of electric utilities from coal to oil, with resulting increased demand for oil.

—Shortages of natural gas. For the first time, in 1972, demand exceeded supply.

—Wet weather, especially in the Midwest, which produced a wet harvest resulting in the use of more fuel for drying purposes.

Opinions differed on over-all approaches that might be taken. Priorities could be established—but top priorities would probably have to go to transportation and heating uses and these are already the biggest users of fuel oil. Environmental priorities might also be reassessed in the light of wide-ranging energy shortages. There are some indications that imposed slowdowns on nuclear-power development are being quietly eased, but environmentalists show no signs of letting up the pressure they're applying to energy producers. Finally, new energy sources might be explored—solar energy, for example, or geothermal power. But this kind of exploration would be extremely expensive—and it offers no help for the immediate energy problem.

There was not even a good consensus on whether the problem has been expected. One observer, who keeps a close eye on the fuel situation, says his forecast for 1973 was that diesel-fuel supply would be tight but not critical—and yet a crisis is, or at best was, at hand. Another observer puts it this way: "We've been warned for several years that something like this was coming. But government and industry generally have done, or have been able to do, very little about it. And, things could get worse before they show any long-term improvement."

Watching Washington

PC PRESSES THE PANIC BUTTON

REID BEDDOW

Those who remember the frantic days in June 1970 preceding Penn Central's filing for bankruptcy perked up their ears at news that PC Trustee Jervis Langdon, Jr., was in town Jan. 10 grimly trying to obtain Federal aid to avert a shutdown.

There is at this moment no more closely guarded rail secret in Washington than the assurances he received and DOT's contingency plans for emergency aid. Indications were, all plans were under review at the highest level, i.e. the White House, virtually stilling the normally loquacious DOT rumor mills.

About all DOT and FRA officials would confirm was the refrain, "There is no thought of nationalization."

From Philadelphia previously had come word that PC's Federal Court overseer had been told the carrier would have to begin shutdown planning on Feb. 15, absent a cash infusion.

A March 1 shutdown, however, seems to be averted. In what probably will be DOT Secretary John A. Volpe's most important final act involving rails, DOT early this month conditionally approved the unusual step of a 10-year $19.5 million Federal loan, through UMTA, to the Massachusetts Bay Transportation Authority to purchase 145 miles of PC right-of-way in the Boston area. Final approval, say UMTA sources, is a formality.

This amount is negligible compared to the $500 to $600 million PC says it needs to bring about a successful reorganization, but it will keep the wheels turning until a more substantial relief operation can be mounted by the Administration and Congress.

Reportedly Langdon's mission here was to persuade DOT and Congress that bailout could best be effected by PC sale or lease of all or one of PC's four mainline tracks between Washington and New York. Last fall DOT Under Secretary James M. Beggs confirmed to reporters that discussions over this proposal between PC, Amtrak, and DOT had taken place.

Now, say DOT sources, Trustee Langdon is pressing a deal. But they say he is using $500 million as an outside figure, while DOT appraises the line as worth $100 million at most.

It is possible that announcement on this matter will be timed for release of PC's final reorganization plan, due April 2.

WHAT PHASE 3 MEANS TO RAILROADS

President Nixon's scrapping of mandatory wage-price controls in favor of voluntary guidelines on Jan. 11 will have the immediate effect of reducing paperwork with respect to rail freight rate increases and scheduled wage increases. Previously, rate requests and wage increases had to be submitted to the Pay Board or Price Commission, now abolished, for advance approval and certification. Now that tier is removed. However, in Phase 3, the Cost of Living Council remains empowered to intervene to establish "interim price and wage levels"—where business or unions do not comply with suggested guidelines, hold public hearings, and issue special restraining orders. The Council also retains the power to enforce a rollback of excessive wage or price increases. The voluntary wage increase guideline is 5.5%, plus fringe benefit costs amounting to .7%.

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We're not experts in every phase of railroad safety— but as the industry's pioneer designer and producer of electronic hot box detection systems, we can claim a high level of successful experience in working on the problems of bearing failures, axle burn-offs and derailments associated with undetected hot boxes.

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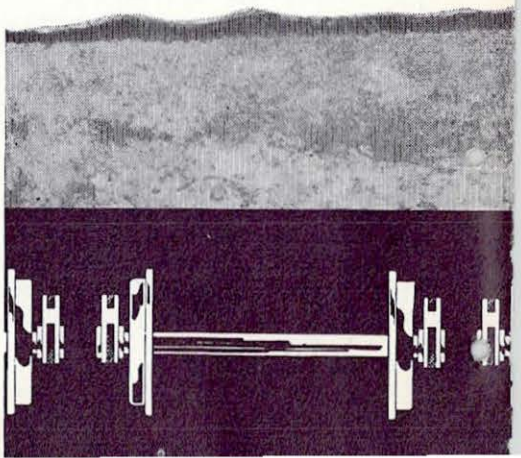

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Hot box hide-n-seek. A dangerous game.

Hot box hide-n-seek is an old game — as old as railroading itself. And the villain in the game is the overheated journal that you can't find until it's too late — that's when it worsens into a really dangerous axle burn-off and costly derailment!

The safe way to beat the hot box at its own game is with a SERVOLARM® Model 8000 Trackside Hot Box Visual Display System. Designed to operate with any SERVOSAFE® Hot Box Detective™ System, the SERVOLARM visually signals the presence of a hot journal box and also pinpoints its location. SERVOLARM helps to eliminate train stops and crew delays. It simplifies and speeds up the entire hot box location procedure by directly notifying the crew via a trackside bi-directional display board — a digital readout shows the axle count location of the hot box. If there are no hot boxes, the display board reads "000."

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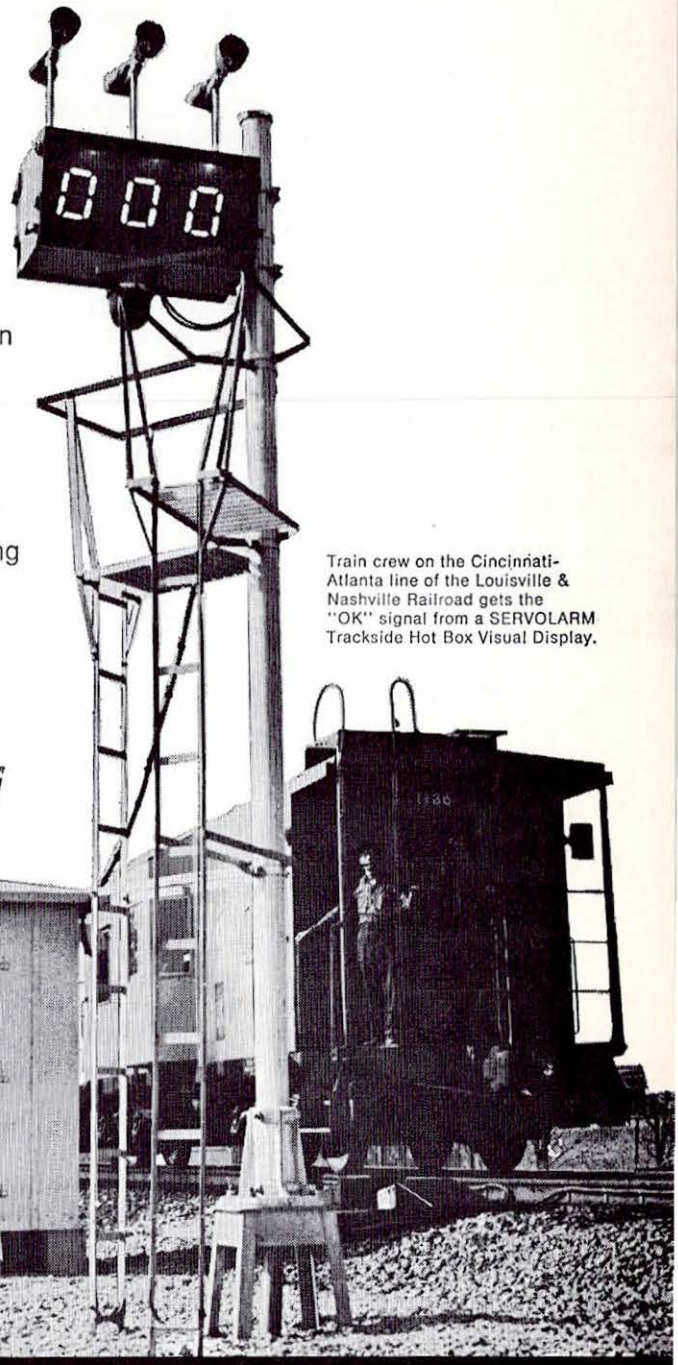

Train crew on the Cincinnati-Atlanta line of the Louisville & Nashville Railroad gets the "OK" signal from a SERVOLARM Trackside Hot Box Visual Display.

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Lines on Labor

GUS WELTY

TO AGREE IS GREAT, BUT. . .

All the world loves a couple of guys who can sit down and settle their differences—whether they be two neighbors, two drivers with crinkled fenders, or management and labor. Unfortunately, such things don't always happen—which is why there are such things as courts and arbitrators. And "neutrals." A few weeks ago in this space (RA, Dec. 25, 1972, p. 10), the virtues of two-party settlement were extolled. What could and should also have been pointed out was the potentially valuable role of the neutral—in, for instance, the railroad emergency-board context and in the specific context referred to then, the Penn Central/United Transportation Union crew-consist dispute. Put most simply, the neutral should be—really, has to be—more than a mediator. Especially when his assignment is to be more, as it is with an emergency board and as it was in the PC/UTU case.

ENTER "THE NEUTRAL"—WITH A JOB TO DO

Taking the PC/UTU situation first, let's just say that the neutral—as chairman of a tripartite committee—didn't appear to fulfill the assignment, no matter how abstract-good his two-party philosophy of settlement may have been. The fact is that if the committee was unable to reach agreement, it—meaning, in effect, the neutral—was to provide "recommendation for final disposition. . .together with any other recommendations it may deem appropriate." The role of the emergency board is not dissimilar. It's supposed to investigate a dispute and make its report. Perhaps there is a mediatory role which a board can perform. But basically and finally its role is to investigate and make its report. Its role in recommending solutions is understood and accepted and that means judging a dispute on the merits, not just splitting the difference between sides.

MERIT CAN BE JUDGED—AND IT SHOULD BE

In the railroad industry, there have been disputes and disputes—and boards and boards. In some instances, management and labor haven't really begun to "bargain" until a dispute reaches the board stage. In others, a pretty clear record has been established before a board gets the case. As for the variety of boards that have existed, some have been difference-splitters, some have tried to work on the more cut-and-dried issues (wages) while throwing up their hands at the complex (work rules). Some—such as the board in the most recent UTU wage/rules case—did the over-all job, and did it well. An observer would have to wonder if the existing rules agreement with UTU would have come about without the effort that board put into its study and without the specific recommendations it made. And, much the same kind of praise could be laid on the board that handled the recent dispute with the Sheet Metal Workers. It looked at merit and recommended.

Certainly, there will be times when the merits of a case are a bit foggy—but in the railroad industry, there shouldn't be many such times. History is too complete, and cases are seldom less than well-prepared. Merit, in short, is there to be judged. What does this mean? Well, first that the parties ought to give settlement a real try. And second, when they fail, and the "neutral" goes to work, he'll have "merit" to work with—and little excuse for ignoring it.

OMB may cut Amtrak's funding

In singing radio commercials and in print-media ads, Amtrak last week was exhorting Americans to "take the trip without feeling the trip." But the Office of Management and Budget, watchdog of Federal spending, appeared to be neither listening nor reading. White House sources said the OMB was preparing to cut Amtrak's funding in fiscal 1974 (which begins next July 1), to below $100 million, compared to the $170 million which Amtrak got in fiscal 1973. Even this figure was said to represent a relenting on the part of OMB, which had been thinking in terms of around $50 million but bowed slightly to pressures from the Department of Transportation.

Any such cut in Amtrak funding would probably mean a drastic reduction in Amtrak services.

As of July 1, Amtrak will be free, under the Act of Congress which created the National Railroad Passenger Corp., to eliminate any of the 200-plus trains which it now operates daily. Amtrak President Roger Lewis recently announced that new turbine-powered corridor trains will be introduced between Chicago-Milwaukee and Chicago-St. Louis next summer, using equipment being acquired from France and Canada. In an interview with Railway Age, Lewis declined to speculate on what trains, if any, might come off on July 1, but he did say that the so-called transcontinentals (e.g., the Chicago-Seattle "Empire Builder" and the Chicago-Los Angeles "Chief") were not the corporation's principal money losers (RA, Jan. 8, p. 20).

There is considerable support for Amtrak among key Congressmen—and Congress, conceivably, could change OMB's mind about Amtrak funding. Many Congressmen see Amtrak as at least a partial solution to intercity highway congestion. But while Congress years ago insured the future of highway construction by creating the Highway Trust Fund, which now generates around $5 billion a year, Amtrak must rely on the general fund for support. In coming days, train partisans will be reminding Congress that the $100 million which OMB reportedly proposes to dole out to Amtrak in the next fiscal year represents around 13 days of highway building; and that the new trains going into service in the Chicago area next summer, and priced at something more than $2 million apiece, come in at about one-tenth of the cost of a new jumbo jet—and have the additional advantage of not requiring Federal expenditures for traffic control.

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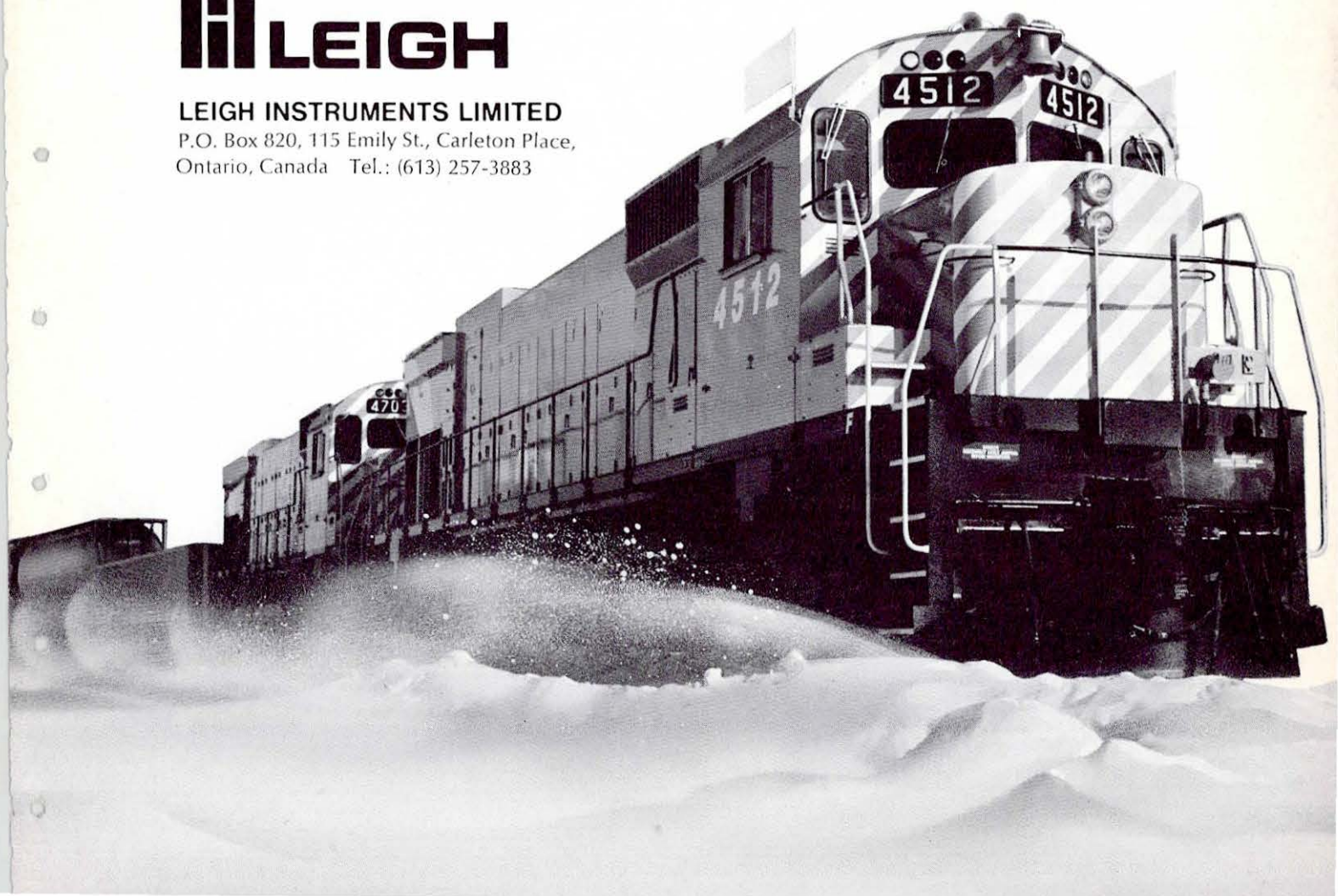

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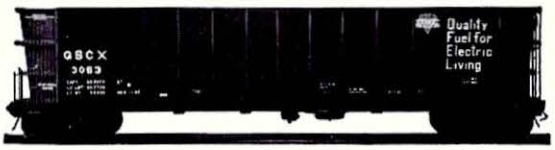

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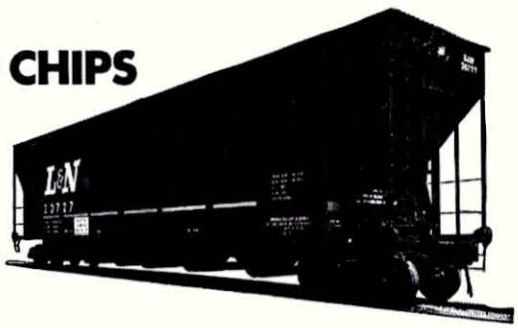

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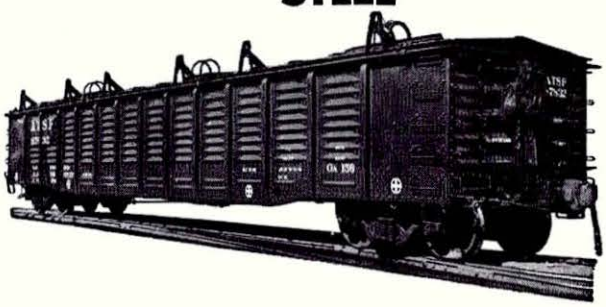

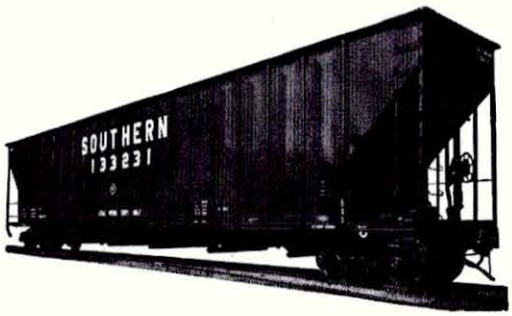

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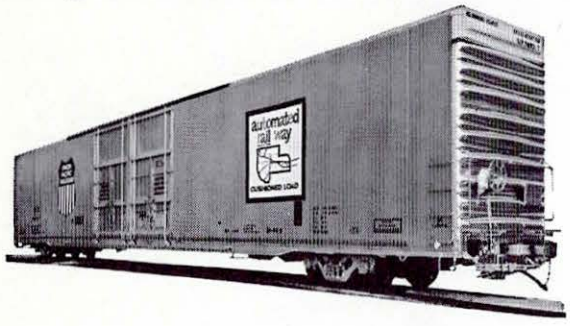

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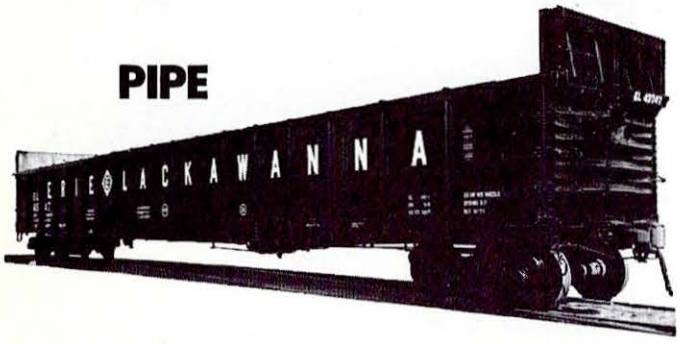

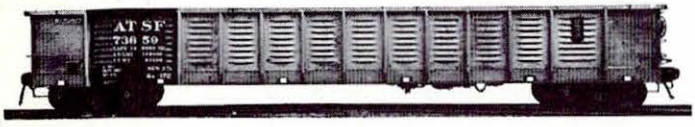

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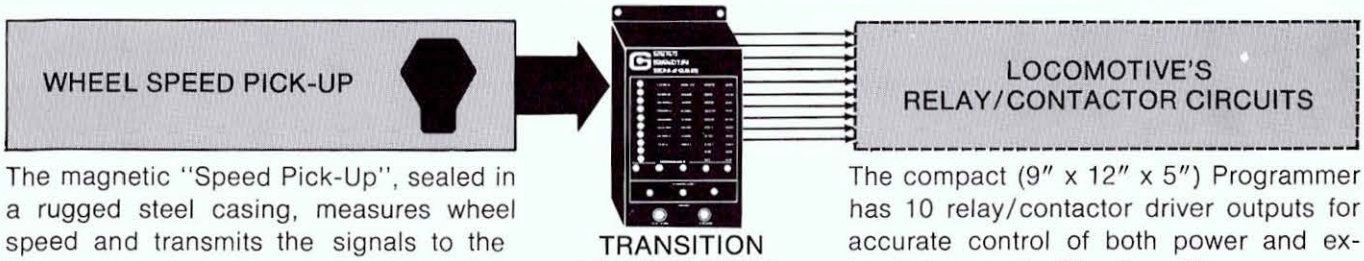

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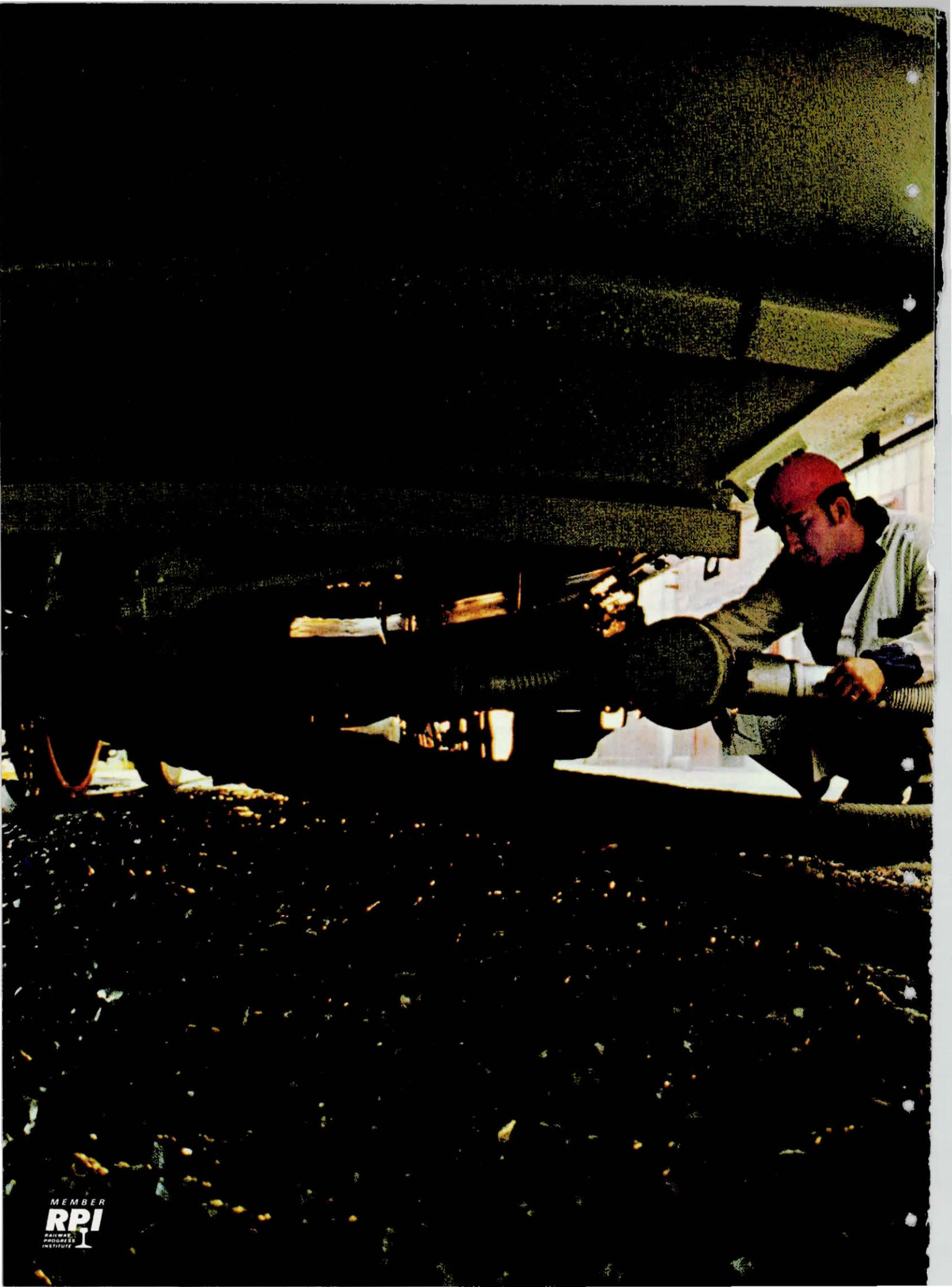
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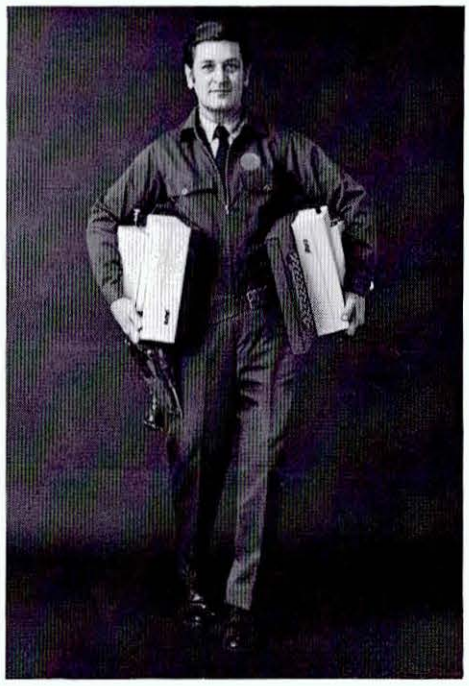

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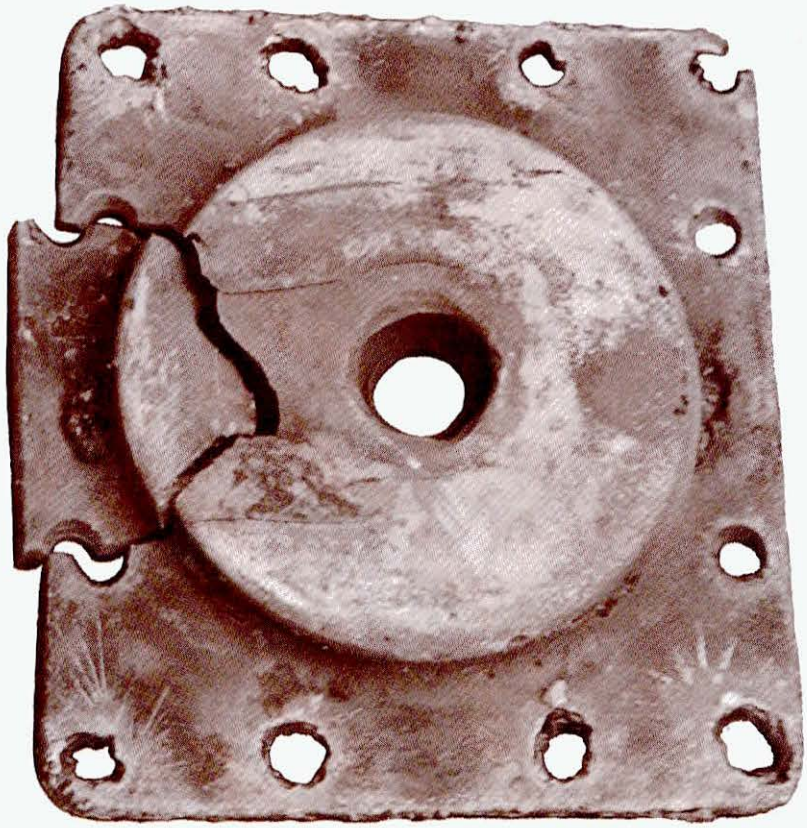

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Productivity: The key that can unlock the railroad future

Railroads will be operating with genuine common purpose in 1973—common purpose that will stretch coast to coast and from Capitol Hill to the smallest division point or engine terminal.

The key word will be "productivity"—not in any narrow sense, but in the broadest of all possible senses. Because without over-all and total dedication to improvement of productivity, there can be no gain, no profit, no net betterment for transportation generally and for rail transportation specifically.

Both people and capital must work harder, and more efficiently

Productivity means a lot of things. It means capital productivity, investment with a meaningful return. It means people productivity, the maximizing of human resources. It means service improvement, reliability improvement, more runthrough and unit-train operations, more equipment and better utilization of it, less damage to customers' shipments, stepped-up maintenance of track and other fixed plant, better terminal operations, more significant use of computer capabilities, an increase in innovation as applied to rail marketing and service design. Productivity means a better product and better ways of selling it. It means new demonstration of railroad essentiality to the public and its elected representatives, so that needed legislative and regulatory reforms can be made.

In many ways, the industry has never had a better-built base on which to stack its gains. At the same time, in many ways, the industry has seldom headed into a new year in which so many important elements were beyond a good measure of in-house control.

Help could come from Washington, but it will not come easily

Take, for example, the legislative situation. The Transportation Association of America may have summed it up best: "We look to 1973 as a crucial year for transportation. It has the potential of being truly a threshold year—one in which a major breakthrough could be achieved toward the solution of transportation's root problems. Much depends. . .on our willingness to take full advantage of important legislative groundwork laid in 1972." Nobody would deny that the groundwork has indeed been laid. Nobody would discount the importance of the extensive hearings which transportation problems and proposals got. Nobody would write-down the significance of the coalition which supported the Surface Transportation Act—a coalition that included the major surface-transportation modes and much of organized labor in the involved industries. But the Administration's goals in its "four more years" remain somewhat in doubt. Some seers say a standoff could develop, between a spending Congress and a thrift-minded Administration. Transportation legislation is by no means a big-ticket item. But it could get lost in the shuffle, which is why it is vital that all concerned, from those working in Washington to those out in the field, show no slackening of effort to keep transportation's needs—and the nation's need for transportation—squarely in the public and governmental eye.

Labor/management: Can the spirit of '72 survive the pitfalls of '73?

Or, take the management/labor situation. Railroads will have their own set of problems in trying to keep a new cooperative spirit going in the middle of hard bargaining on wages and the retirement system. But 1973 is also one of those years in which the calendar is dotted with contract expirations in other key industries—and it takes only a couple of major strikes to destroy the most carefully prepared economic forecasts. Outside the railroad industry, the first indicator of what's ahead may come early, in Teamster contract talks in the Midwest. But in April, major tire companies will be under the gun. General Electric, Westinghouse and the rest of the trucking industry face May and June deadlines. Major airlines and

Down-to-earth demands could mean a fairly smooth ride

meatpackers have contracts expiring at the end of August. And in September comes the big one—the automobile industry and the United Auto Workers. Presumably, all of these negotiations will be taking place in an atmosphere of economic restraint—Phase 3. Presumably, too, powerful unions will be probing Phase 3, trying to find a soft spot. With all the potential for conflict, '73 could be a tough year. On the other hand, there is a chance for a fairly smooth ride: If the economic controllers hang firm, there will be little point to the rhetoric of confrontation—and negotiators for the labor organizations will be better able to defend settlements that do not include the moon and a planet or two.

And then, there is rail management's own approach to '73. Last year had its good moments: Management and labor got along better and real progress was made in implementing work-rules changes. The ICC did finally approve a freight-rate increase. Cooperatively and individually, railroads did make substantial service improvements. Freight traffic hit a new all-time high in terms of ton-miles, TOFC/COFC was back on the high road, and at the end of the year the figure on the bottom line was somewhat bigger than it was the year before. In other ways, however, 1972 made a limping departure and '73 a staggering start: Largely because of territorial competitive pressures, the industry remained split on proposals to apply for a new freight-rate surcharge. In many, if not most areas, railroads faced a diesel-fuel shortage that was bad and getting worse. Environmentalists were firing away at the industry on several fronts—even though a good record could be made for railroads as (1) the low-polluting mode of transportation, and (2) spenders of a lot of money to correct those environmental problems that do exist.

Capital and operating expenditures will add up to $3.7 billion

As at the start of most years in recent history, there were also questions as to the pace at which the industry would be able to make physical and operating improvements. Going into '73, the outlook was for an increase of at least fair proportions in capital expenditures, both for equipment and for fixed plant. And the shape of the total railroad market, including both capital spending and ordinary purchases and including private companies supplying equipment, looked like something in the neighborhood of $3.7 billion (and that does not include other substantial expenditures for construction and equipping of rail-based rapid transit systems).

Projections also took into account the likelihood of continuing shifts in spending priorities, in which fixed-plant investment would show somewhat larger relative gains than would investment in rolling stock. The equipment market, however, was showing its own degree of strength—and, while railroads may be hard-pressed to match 1972 levels of activity in motive-power acquisition, there is broad-based support for projections of a modest jump in freight-car acquisitions.

Car orders will turn slightly upward. . .

At this time last year, forecasts were making 1972 look like a tolerably good year for the carbuilding industry. But several things happened on the way to 1973. For one, the re-availability of investment tax credits had less effect than expected. For another, Congress spent the year in record-building and in discussing freight-car legislation—but it didn't pass any. For a third, eastern roads were hard-hit by storm and flood damage and this had its impact on spending priorities. And finally, railroads were simply doing a better job with what they had—handling that record volume with fewer cars and without significant car shortages. What does '73 look like now? At this point, nobody is predicting a drop in car orders from last year's levels. If there is a consensus, it is that orders will fall in the 55,000-to-60,000 range—and again, it is possible to find those who put the figure at 5,000 to 10,000 cars higher.

As for railroad fortunes over-all, '73 shapes up as a year of mixed blessings and curses. Economists seem again to be playing a game of catch-up-and-run-ahead—and it appears that some of those who doubted the 1972 economic resurgence even after it was under way are now trying to figure when the next slump will take over. As for major traffic-producing industries, (1) the coal business could benefit from a petroleum shortage, (2) grain traffic has been up and could continue to be, and (3) auto-makers are looking for another upside year and as the automobile industry goes so go a lot of other industries. But, there are those key-industry labor contracts to consider. There is government to consider. There is the railroad industry's own continued capacity for self-improvement to consider.

. . .as railroads try to open new markets

That last point is at the heart of the renewed or intensified emphasis on productivity: Profit depends on it, and that's profit not just in terms of net or ordinary income but profit also in the sense of opening new markets, winning new business and generally doing the kind of transportation job that a growing economy demands.

So, in 1973, talk—as Railway Age will—of faster and more reliable rail service.

Consider the growth of runthroughs and interdivisional runs. Consider the emphasis on individual-car performance which improved management techniques and the computer make possible. Consider new efforts and new tools aimed at cutting down on that expensive and customer-provoking nuisance, freight loss and damage. Consider the over-all profit impact of the unit train. Consider the methods and the tools being used to put better track under trains. Consider how railroads are attacking the universal problem of making terminals work for, and not against, the efficient flow of traffic. Consider what carefully-taught computers are doing. Consider the impact of fact-based, not guess-based, marketing techniques. Consider the improvement in railroad sales forces and in what they have to work with. Consider the changes in the way rail management and rail employees and their organizations handle their problems. Consider the greater public and governmental awareness of railroads and of transportation generally that has come about through ASTRO and STA programs. Consider the quality of leadership in the industry, which has seldom if ever been higher.

For shippers, there will be greater reliability of service

At the same time, consider that '73 will not be without its negatives. A new and somewhat different Congress is sitting in Washington (along with an old/new and somewhat different Administration). The problems of the highly-visible and deeply-troubled eastern railroads will continue to influence public attitudes toward the whole industry. (This is not to say that serious study of the eastern situation is bad. It's not, because solutions have to be found. It is to say, however, that in terms of what makes headlines one critically-injured Penn Central is probably worth 10 healthy Southern Pacifics.) The image problem, too, will still be with the industry, and it may be up to individual roads to handle this one as best they can in taking their case to the general public and, most importantly, to the specific publics that have the greatest direct stake in better transportation service. And in that context, there is also Amtrak—trying hard, but perhaps harboring champagne ideas on a beer budget. Early in '73, the talk was of adding new trains (newly-purchased French and Canadian turbine-powered trainsets for service in the Chicago-Milwaukee and the Chicago-St. Louis corridors) but of reducing service generally—due to an anticipated appropriations cut (from the current $170 million to less than $100 million) dictated by the White House Office of Management and Budget.

An image problem remains—and Amtrak is part of it

Down at bedrock, there are a couple of questions about the railroad industry that have long been pertinent: (1) How can an industry with such problems continue to do as good a job as it does, in providing transportation service and in improving its capability? and (2) how can an industry which is so demonstrably vital to the nation get so little meaningful attention from those whose job it is to see that the nation keeps moving ahead on as steady a course as possible?

If, however, a firm forecast had to be made about 1973, it might have these ingredients:

—Barring serious labor problems on the railroads or in other major industries, look for another ton-mile and freight-revenue record.

—Figure on a continuation of improvement in relations between rail management and the labor organizations, even under the pressures of bargaining that will be felt. Look for further service improvement resulting at least in part from work-rules changes.

—Look for government to act on transportation legislation. Few petitioners come away from Washington with their petitions intact. But prospects look good for changes covering equipment-acquisition, grade-crossing improvement, elimination of tax discrimination, an easing of rail abandonment restrictions.

—Look for the Administration to make dramatic moves, this side of nationalization, to bail out not the Penn Central but the people and the economy it serves. (The trustees' reorganization plan isn't due until April 2, but they've telegraphed the bad news in a series of meetings with high-ranking officials in Washington: PC can't make it without government assistance on the order of perhaps half a billion dollars.)

The big question: What will happen to the Penn Central?

—Look for the industry generally to show still-further improvement in efficiency indicators. That kind of improvement doesn't always mean better service for the customer, because "efficiency" is sometimes mistakenly defined as a synonym for "economy." But railroads will be making their economies where they can, while they give top recognition to the need for giving the customer full value for what he is paying.

—Finally, look to productivity. Not as a scare-word or as a management-consultant's secret-symbol for cost-cutting. Look to it instead as the word that best describes how an industry will be trying to improve its own position by improving its ability to serve a nation.

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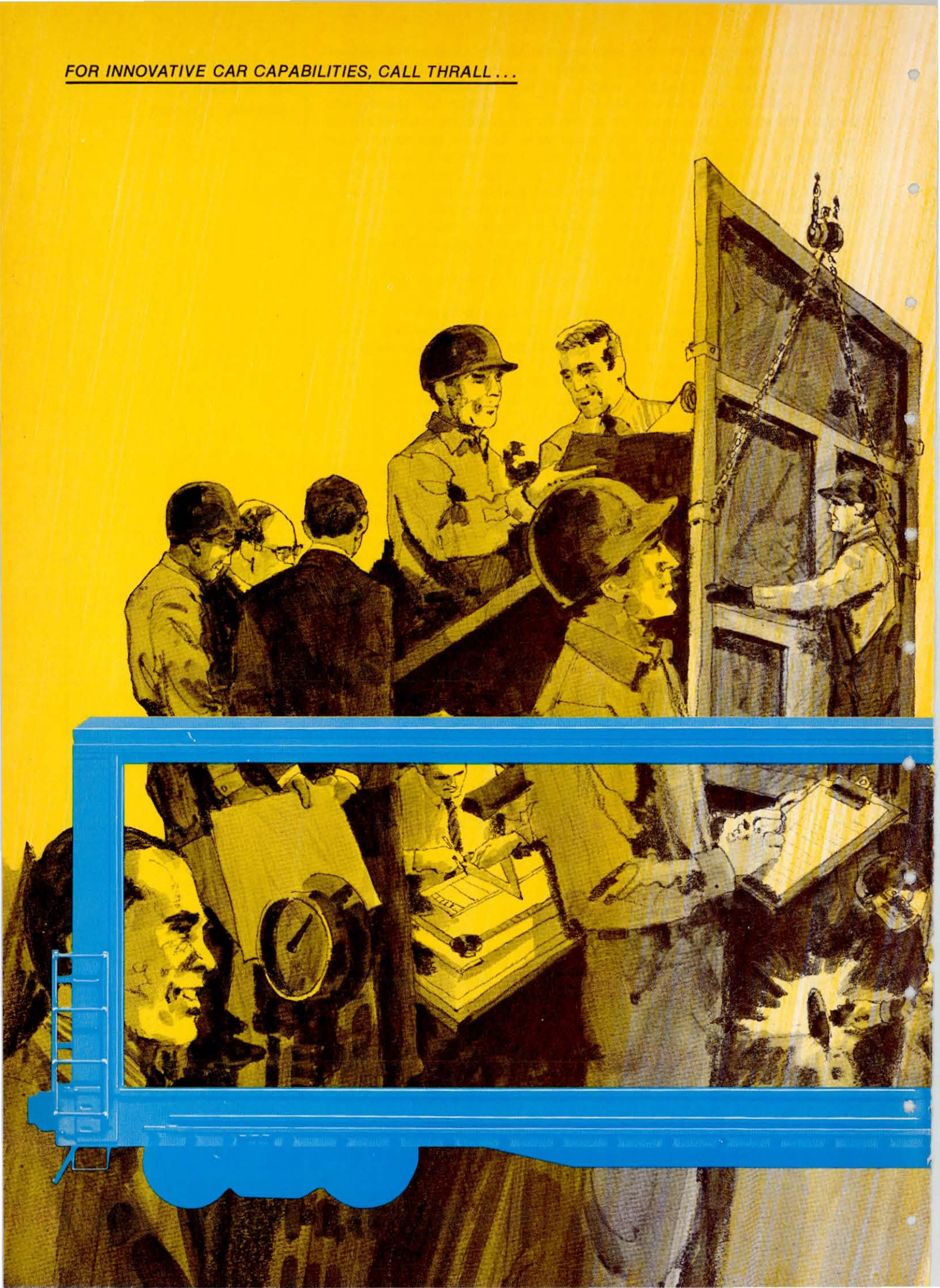

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1973 OUTLOOK

Car orders may reach 60,000 this

By FRED N. HOUSER
Mechanical Editor

If peak-and-valley buying patterns are something less than ideal for builders of freight cars and manufacturers of car components, then it might be assumed that the stability of the Seventies would be something to be continued. In 1972, for the third straight year, orders for new cars were in the neighborhood of 50,000. However, for the first time in nine years, deliveries also dropped to this same level. It turns out that a sustained low level of car buying activity may be fully as bad as the great swings which have characterized the recent past.

Interestingly, just a decade ago and for the first time in this century, car orders also stabilized for a three-year period (1960-1962), but at a level of about 35,000 units. Then in 1963 the order total went up to almost 61,000.

Chances are now that there will be no 75% upward jump this year, as there was in 1963. There will be an upturn, but of more modest proportions, possibly 15%. This could mean that the order total for 1973 will be between 55,000 and 60,000 cars. It could go higher.

It is not easy to predict, however. Who, a year ago, with all the hoopla generated by ASTRO would not have guessed that some loan-guarantee legislation would be passed by Congress? It wasn't—and with that there disappeared a substantial number of new car orders.

● **Traffic trends.** While 1972 established a new record for ton-mile production (up about 2% over 1969, the previous high), the real crunch did not come until late in the year. Through November, according to AAR, no "serious" difficulties were encountered in handling not only the normal fall grain harvest, but also the traffic generated by grain sales to Russia. Given credit for the improvement were AAR's new car-service enforcement powers, an expanded AAR force of car service agents, more run-through trains, incentives to encourage faster loading and unloading of cars, expanded car information systems, and improved yard and terminal operations.

George L. Green, Pullman executive vice president, commented some months ago on the string of 50,000-car years, observing that "at that rate, substantial numbers of cars will disappear from the fleet unless the carriers are prepared to offer shippers beat-up, old equipment." With a fleet of 1.8 million and an average car life of 30 years, about 60,000 cars are retired annually. With only 50,000 coming into service, there is a new loss of 10,000 cars per year. Even with an increase in per-car capacity, this is not the way to tool the railroad industry to maintain its share of the transportation market. Federal projections have indicated an increase of 15% in annual ton-mile production by 1980.

Because the replacement rate is below that needed to meet peak requirements of shippers, Henry A. Correa, president of ACF, has been working with others in the industry to develop "a private National Freight Car Pool." This pool, he says "would allow cars, as needed, to pass from one pool member to another, without requiring railroads in weaker financial condition to make investments they can ill-afford, or financially strong roads to make investments for rolling stock on a marginal, or short lived movement."

The principal reason it has been difficult to develop such a pool privately, says Correa, "is that per diem rates have not been sufficient to attract the private capital necessary to accomplish such an objective." With higher rates, private capital should be attracted "provided equity owners in the pool can give proper assurances that they will keep the cars busy."

Right now Correa is looking for a much better year for carbuilders, as well as for railroads. While financing of equipment has been difficult because of the railroads' cash flow, this is now on the upturn and should serve to spur orders. While he is "hopeful" on Federal equipment loan guarantees, he does not see much legislation being enacted before August or September.

Correa indicates as particular bright spots in orders this year tank cars, general-service and special box cars, and flat cars.

● **Better-than-normal business.** Although 1972 was a disappointing year, E.T. Ahnquist, president of Pullman-Standard, says early indications for 1973 point "to a better-than-normal business climate." He adds that probably the most disappointing development of 1972 was the failure of Congress to approve the Surface Transportation Act "which would have provided our railroad customers with Federal-guaranteed loans to purchase badly-needed rolling stock."

Ahnquist, also chairman of Railway Progress Institute, says that the level of carbuilding activity in 1973 "will depend, in substantial measure, on prompt action by the Congress to enable railroads to serve the fast-growing economy." Timing, he says, is important to railway suppliers, since "early enactment of legislation favorable to the carriers would be a strong stimulus."

Pullman's two big freight car plants operated at only 41% of capacity in 1972. The Bessemer, Ala., facility was shut down from late March until mid-June for lack of orders. While Bessemer and Butler, Pa., are capable of turning out 20,000 cars yearly, they produced only 9,391 cars in 1972, compared with 12,970 in 1971 and 16,947 in 1970. Pullman-Standard and Pullman Transport Leasing both experienced an increased demand for covered hopper cars

year–but there are ifs

in 1972, especially for the grain trade. This is expected to carry over into 1973 as foreign orders for domestic grains continue to be substantial.

Walter A. Renz, president of the American Railway Car Institute, recently noted that there is concern on the part of government agencies about not only the capacity and size of the car fleet, but also about the ability of the commercial shops to produce freight cars. ARCI forecasts orders for 55,000 cars this year, and deliveries in the same range. Renz reports that about 45% of the cars ordered through the first eleven months of 1972 were for non-railroad customers, although financing arrangements for railroads such as Penn Central effect this figure. In any case, at least 35% of the cars were for traditional private car lines, compared with only 28% in 1966.

● **Non-railway ownership.** The inability of railroads to finance rolling stock did increase the trend toward having shippers work through car leasing companies, reports John C. Felten, president and general manager of U.S. Railway Manufacturing Co. "There was also a continued interest in rebuilding of obsolete cars, both by railroads in their own shops, and through purchase and leaseback transactions with carbuilders," says Felten. For U.S. Railway, RBL insulated cars and specialized box cars were most in demand. Felten spells out some of the types of cars looming large in 1973 prospects: covered hoppers, RBL cars, coil cars for steel and aluminum service and woodchip cars. "Where purchase is unlikely," he continues, "we will continue to innovate in the type and option of leases we offer to railroad and shipper customers."

Thrall found car prices down in 1972, due to the highly competitive situation in carbuilding. It was able to operate its facility through the year, and does now expect a "modest" improvement. "Emphasis by our customers," says John P. Lynch, vice president-sales, "will continue to be on specialized equipment to meet market requirements in the lumber, steel, energy, rubber and general manufacturing industries." Lynch sees not only a positive effect from passage of some Surface Transportation Act, but also is apprehensive about work stoppages in some of the nation's major industries, due to the large number of labor contracts terminating this year.

● **Tank car prospects.** Union Tank Car found 1972 better than 1971 with all the increase in tank car orders coming during the final two months "based on a strong surge of inquiries resulting from what appears to be a rapid improvement in the economy." Jack R. Kruizenga, senior vice president, reports that "after several months of low level tank car production which overlapped an accelerated scrapping program of 50-year-old cars by all owners, a temporary tank car shortage has developed." As a result, backlogs have improved and Kruizenga is unable to say whether this is only a short-term spurt, or a long-term trend. "Prices have continued to be depressed," he adds.

"Due to a variety of shipper uncertainties related to shipment by rail," continues Kruizenga, "we continue to see transfer of tank-car traffic to other modes. In addition, tank car users have become very efficient in fleet management techniques, improving utilization of existing cars. It is apparent that more freight will be transported in fewer cars. Consequently, we foresee an extended period during which tank-car builders may be operating in the range of 5,000 cars per year, which is well below industry capacity."

Hawker Siddeley Canada has surveyed the Canadian situation and reports that while the value of freight-car orders placed there went up to $100 million in 1972 from $94 million the year before, 41% of the total was represented by the 2,000 covered hoppers ordered by the Canadian government for grain service. Without this, business would have been comparable to 1967 and 1968. "From present indications," says Hawker Siddeley, "we anticipate 1973 will be fairly active and slightly better than 1972. We attribute this to a fairly optimistic outlook by the railways."

U.S. railroads increased the proportion of cars to be built in their own shops in 1972, compared with 1971. Roads such as Norfolk & Western, Chesapeake & Ohio and Illinois Central Gulf continue to rely on their own production facilities for new cars. Many railroads are hard at work on major rebuilding programs.

Maine Central, for instance, has rebuilt a substantial number of 40-foot, 50-ton box cars with funds generated by AAR's incentive per diem program. This is a daily surcharge paid by the using road to car owners for plain, unequipped box cars from September through February each year. The balance so generated must be earmarked for buying, building or rebuilding plain box cars. Recently some roads have protested this restriction since they have been forced to retain obsolete cars.

One of the things tending to obsolete 40-foot box cars, is the 40-foot piggyback trailer. Recently, for instance, Great Dane Trailers delivered a van type unit which is the 25,000th acquired by Realco Services, Inc. Great Dane has called this unit "a landmark, not only for Realco as the world's largest piggyback suppliers, but also for the railroad piggyback industry."

Realco President Robert Budorick observed that "the trailer will go into service in Realco's Geographic Pool System. This free-running, nationwide network will provide an opportunity for everyone in piggyback to see this beautiful unit." ■

THE MOTIVE-POWER OUTLOOK—p. 35 ▶

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Locomotives: A shift in the balance of power?

Today: An Arizona coal line

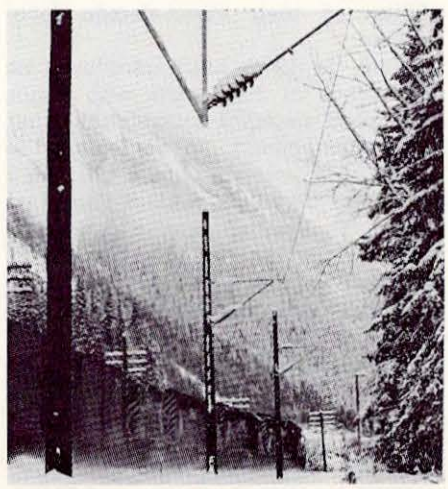
General Electric E60 electric unit was extensively tested under 50kv catenary at builder's plant prior to shipment to Arizona where operations start later this year.

The winter of 1972-1973 has much to show North American railroads. After it is over, there may be some new thinking about their motive power. For the first time in four decades of dieselization, railroads are encountering real fuel supply difficulties, particularly in the Midwest, (see page 11). Diesel fuel prices are also moving up after a decade of stability.

High in the Canadian Rockies snow is falling on a stretch of catenary which has been installed beside the Canadian Pacific mainline as part of the road's investigation of electrification. And soon the world's first 50,000-volt alternating-current electric locomotives (see cover) will be ready to operate on the continent's newest electrified line in northeastern Arizona.

In looking to the "not too distant" future, Union Pacific President John C. Kenefick sees electrification as a technological breakthrough which could make possible "quantum productivity increases." Because of this, UP has been making an intensive feasibility study of electrifying its high-density line from North Platte, Neb., to Green River, Wyo. "The costs of such a venture are not as staggering as many assume," says Kenefick, "particularly when measured against our regular capital improvement budgets. Locomotives of some kind will have to be purchased—and electric locomotives have twice the life expectancy of diesels. They cost less, maintenance costs are far less and the potential for high-speed, long train operation is much greater."

● **Fewer units, faster trains.** UP sees a reduction in the number of units and the ability to accelerate faster as reasons electrification "seems to mesh nicely with our high-speed, heavy-tonnage operating philosophy." Among the wide ranging arguments, according to Kenefick, is recognition of the fact "there is a limit to the amount of petroleum our economy can furnish. Electrical generation does not depend on that vanishing commodity. Diesels must have petroleum, regardless of price. Environmental considerations seem also to weight in favor of electrification. When you balance everything out, you come up with a significant return on investment, and a critically needed opportunity to improve productivity via selective electrification."



Tomorrow: A Canadian mainline?

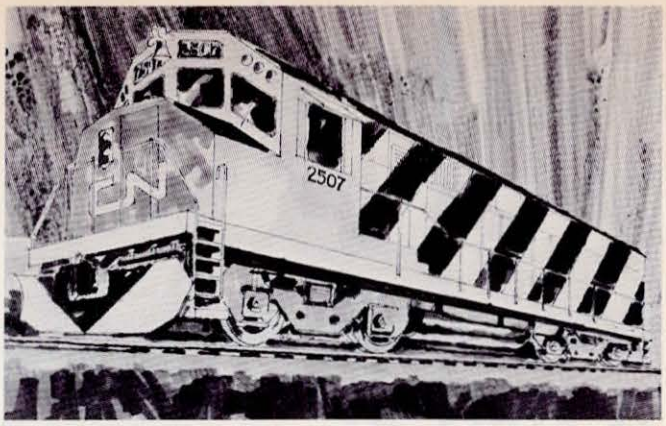
Prototype 50kv catenary is being exposed to winter rigors at Ross Peak, B.C., as diesel-hauled CP freights pass beside it.

Of course, any switch to electrified operation, if and when it comes, will not come overnight. Last year U.S. builders produced more than 1,300 diesel locomotives for domestic use, and they are expected to deliver at least as many again this year. But the arguments for at least a degree of electrification are starting to look more and more compelling.

General Electric, builder of the three 6,000-hp E-60 electrics for the Black Mesa & Lake Powell Railroad, reports that 50% of all U.S. freight traffic is handled on less than 10% of the nation's route miles and it is these lines which are considered the optimum extent of electrification. GE observes that in the past decade "virtually every major U.S. railroad has considered electrifying high-volume lines" and some of these studies, now complete, strongly indicate several railroads will electrify during the 1970s.

● **The technology.** What will this electrification be? The 50-kv commercial-frequency AC system which is being pioneered by GE for the isolated coal-hauling BM&LP could well be a prototype for the system that would be applied to western lines. In the East, where clearances are more restrictive, railroads probably would be electrified with 25 kv, a system first applied in North America on the Muskingum Electric Railroad which is another private

EMD GP38-2 was most popular GM model in 1972; the 2000-hp unit is again expected to be top seller this year.



MLW M420 road locomotive has Canadian National's crew comfort cab; 30 of 2000-hp units will soon be delivered.

coal hauler (in southeastern Ohio) also equipped with GE locomotives and substation. The 25-kv system is used almost exclusively in extensions of electrification in Europe and Asia.

● **High-voltage.** The new 50-kv technology, first applied on BM&LP, makes possible fewer substations (only one for the 78-mile line) and utilizes thyristor-controlled electric locomotives. The solid-state control and rectification equipment make possible high-capacity freight locomotives "with completely new economic dimensions," according to GE. The 50-kv system also involves a low-cost catenary system.

A quarter-mile section of this catenary has been constructed beside the CP main track near Revelstoke, B.C., for the road's study of the costs and difficulty of erecting such a power transmission system under North American mountain conditions and of assessing the effects of severe winter climate on the structure. "Should we decide to proceed with electrification," explains a CP Rail spokesman, "it will be valuable to have experience in wintertime repair and maintenance of the catenary."

CP Rail began its study in 1970 of the feasibility of electrifying its Calgary-Vancouver main line as one way of meeting the traffic growth in this mountainous region. Presently it is estimated that the project might cost about $200 million and the work would take five years to complete after a decision is made. Half the cost would be for erection of catenary and changes in signaling and communications circuits; the other half would involve acquisition of electric locomotives.

In 1972 Electro-Motive obtained a non-exclusive license from ASEA of Sweden covering ASEA patents and knowhow for the thyristor locomotive. This access to AC electric locomotive designs was, according to EMD, "part of its long-standing engineering policy as a leading diesel-electric locomotive builder to explore continually various prime movers and systems for motive power applications in the U.S. and overseas."

● **Diesel fuel problems.** A spokesman for AAR has said that train service could soon be curtailed if there is no break in the nationwide fuel shortage. Despite the fact that railroads are several times as efficient as other modes in terms of ton-miles per gallon, there is no national policy that could assure adequate fuel for the most efficient user. The AAR says that if the shortage continues, there could be reduced train speeds, curtailed services on branch lines and maybe something "even more serious."

The head of a major consulting firm has recently said that as a result of fuel shortages, price increases over the next ten years will be in the order of 50% to 150% above today's levels. The National Petroleum Council has reported that there will be an average annual increase in fuel prices of 2% to 9%. It expects by 1985 that oil will be up 60% to 125% and coal up 30%.

● **Short-term developments.** Faced with such problems, all locomotive builders have been working to increase the efficiency, reliability and maintainability of their diesel-electric locomotives.

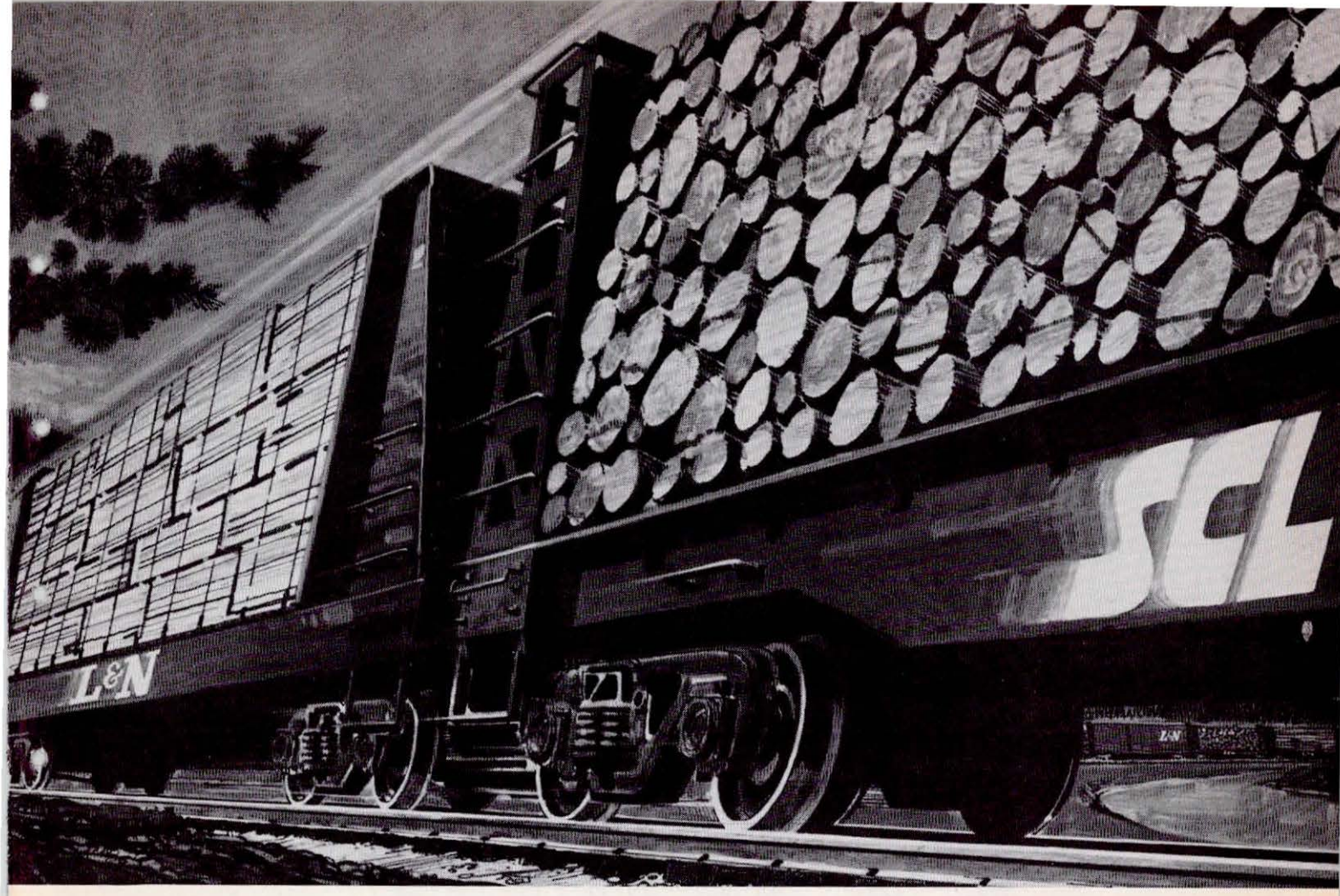
Early in 1972 EMD introduced its new series of road units with major changes in electrical controls and other major components. In September the firm's 50th anniversary was celebrated (RA, Aug. 28, 1972, p.21). "These two events, though separate, were closely related in that our new 'Dash-2' series of locomotives exemplifies the continuing evolution that has characterized the diesel-electric locomotive since its commercially successful inception in the mid-Thirties," says Harold L. Smith, General Motors vice president and EMD general manager.

"Deliveries to U.S. railroads in 1972 covered the broad spectrum of EMD's model line, with demand heaviest for the 2,000-hp GP38-2. Total deliveries of the new road units were slightly ahead of sales for similar units in 1972. Looking to 1973, we see demand holding at relatively the same levels for both four-axle and six-axle units, with emphasis again on the GP38-2."

Canada's MLW Worthington had a 60% increase in 1972 shipments of locomotives over 1971. John Byrne, vice president—transportation products, sees a ten-year growth rate in rail traffic demand approximately 50% higher than in the past decade. "Increased fuel costs and the rapidly growing necessity to conserve energy will also stimulate rail traffic growth," he adds. MLW will soon deliver its first M420 locomotive (2,000 hp) with AC/DC transmission and new design trucks. "The company sees a growing demand for this class of locomotive which can also be offered in a remanufactured version," says Byrne.

● **Other demands.** GE finds that other railroad investment demands and failure to pass STA have reduced locomotive orders recently and forced a reduction in its manufacturing operations. The drive for greater reliability that resulted in GE's XR locomotive concept (RA, Sept. 11, 1972, p. 66B) has also caused railroads to emphasize larger numbers of lower-powered units on trains. "More units per locomotive consist actually decrease mean time between failures, increase total maintenance costs and, most significantly, add to fuel consumption," cautions O.F. Vea, general manager of GE's Locomotive Products Department.

"The high leverage of a sound motive power purchase program should increase demand," says Vea. Such a program should recognize that new high-horsepower, high-adhesion units currently make possible the production of 31% more ton-miles with the same number of locomotives as in 1961. "Such units consume 25,000 to 15,000 less gallons of fuel per unit per year for a given duty," he adds. "The widely publicized diesel fuel shortage puts increased emphasis on smaller consists of higher powered, highly efficient turbocharged units. The persistent pressure for better ecology adds to this emphasis." ■



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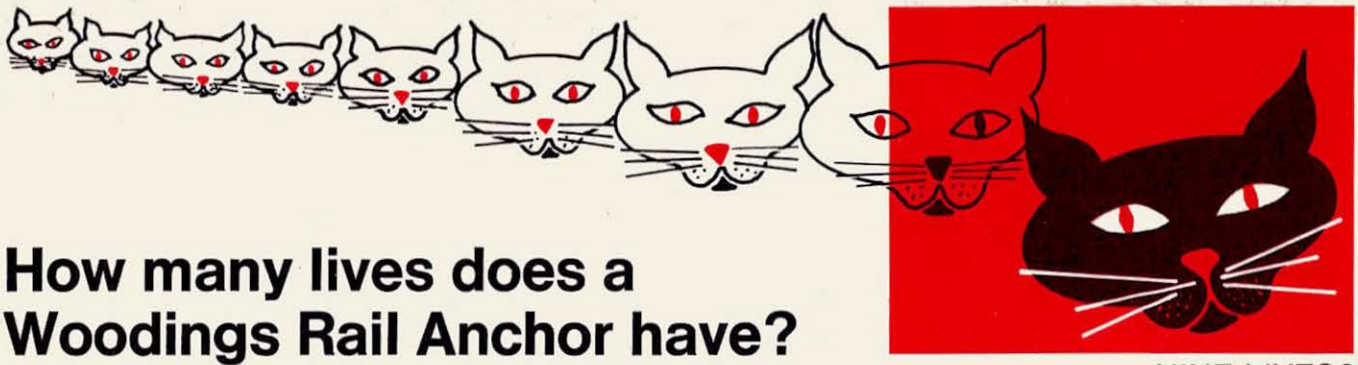

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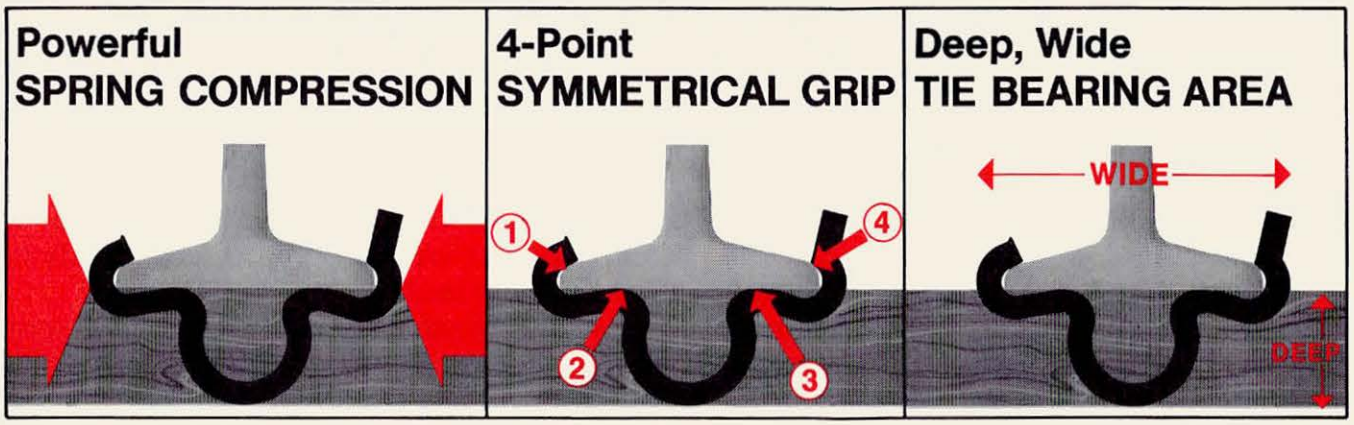

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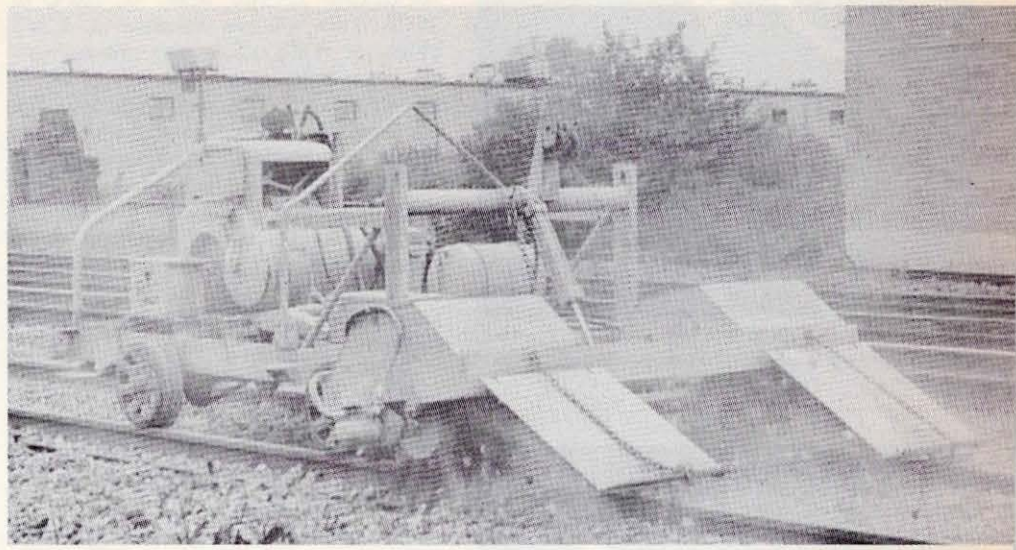
For M/W, a bigger share of the dollar

By MERWIN H. DICK, Engineering Editor



EXAMPLE of a track machine that operates unattended is the RMC Tie-Plate Broom which sweeps ballast from the plates ahead of spikers in rail-laying gang or in advance of tie tampers.

IMPROVED TIE INSERTERS have come from a number of suppliers, including Fairmont.

Are railroads committed to a policy of strengthening tracks? One might conclude that the answer is "Yes" by an examination of recent trends in the major indices of M/W activity, and the prospects for a continuation of these trends, at least through the coming year.

For more than 10 years both rail and tie renewals have traced a generally upward curve. And for the next 12 months the rail-renewal curve is expected to continue upward. While tie renewals in this period for railroads as a whole are projected to decline slightly, examination of the figures reveals that tie insertions on the majority of roads in 1973 will be at a higher level than in 1972.

● **Bigger share for M/W.** The story is told in another way by the increases that have taken place in the M/W ratio. For Class I railroads, the M/W ratio has moved up every year, from 12.1% in 1965 to 14.3% in 1971 and to 14.6% last year, or perhaps to a slightly higher figure which can be calculated only when final figures are available.

What this trend means is that M/W departments are getting a greater share of the railroad dollar. Costs of labor and materials have been going up, but so have revenues. Thus, a fair conclusion is that the increase in the M/W ratio represents more work and materials going into track.

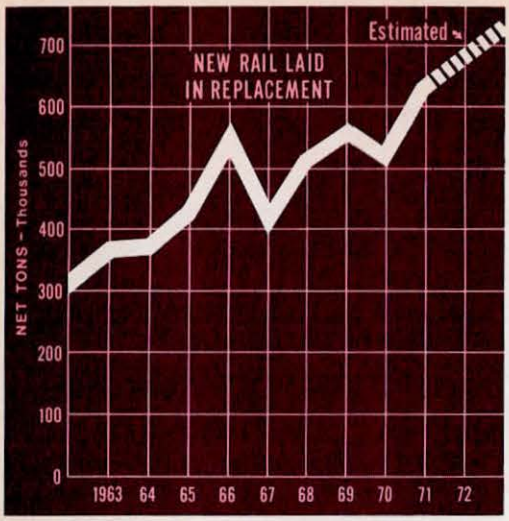
If it is a fact that railroads generally are committed to a policy of building more strength into track—and recent developments indicate this is happening—it is interesting to speculate on the reasons. For one thing, there is evidence that railroad managements have a keener appreciation today than ever before of the role of the engineering forces. A straw pointing in this direction is the number of railroads on which the top engineering officer is now included as a member of the executive family, thus elevating him above the status of a department head.

On at least some roads anyway, the conviction has taken root in the management mind that adequate, continuing M/W programs are essential to sound, economical maintenance. A product of this attitude is maintenance planning on a long-range basis, a practice that is gaining wider acceptance.

● **Serving the cause of safety.** Another factor behind the enlarged M/W programs of recent years is doubtless the thought that the cause of safety can thereby be served. Thus, at least some roads had begun beefing up track long before the FRA Track Safety Standards came into existence.

Whatever the cause, it is a fact that the major indices of M/W activity have become established at a higher level, with the prospect that at least one of them will extend its gains in 1973.

● **Rail renewals continue uptrend.** Looking back at 1972, it is estimated that U.S. Class I railroads laid 685,000 short tons of new rail in renewal, an estimate based on figures submitted by nearly all the larger railroads. The esti-



RAIL RENEWALS hit a new high since 1957 in 1972 and are expected to go even higher this year.

TIE RENEWALS went down slightly last year and are expected to go a little lower in 1973.

mated figure for 1972 represents the largest tonnage laid for any year since 1957, when rail-laying gangs put 770,972 tons of new rail in tracks. The estimated tonnage of rail laid in 1972 is 6.5% higher than the 643,321 tons laid in 1971.

Renewals of new ties, while remaining at a relatively high level, showed a slight dip last year. Again on the basis of figures submitted by most Class I roads, it is estimated that tie-renewal gangs on these roads installed 20,400,000 new ties for renewal purposes last year. Although this represented a decline of 4.8% compared with 1971, tie renewals for 1972 exceeded 20 million for only the second time in 15 years. Moreover, with one exception (1971) tie renewals last year were the highest for any year since 1957.

If the amount of track being surfaced can be taken as a criterion, track should be showing a gain in the quality of surface and line. Twenty-nine railroads told Railway Age that they surfaced out-of-face 39,166 miles of track in 1972. This was an increase of 3,243 miles, or 8.8%, above the mileage surfaced by these same railroads in 1971. (Never in all the years that Railway Age has been compiling these figures has the mileage of track surfaced shown a decline from the preceding year.)

Reflecting the increased programs as well as the effects of inflation, total expenditures of Class I roads for maintenance-of-way and structures continued their upward climb in 1972. The estimate is that these roads spent $1,912 million for MW&S in '72, an increase of 5.5% over 1971. The remarkable fact is that, in view of the inflationary pressures at work in the railroad field, these expenditures are not at a much higher level.

● **Prospects for 1973.** Looking ahead to the next 12 months, it is apparent that, barring unforeseen circumstances, rail-renewal figures will move up to another new high since 1957. Railway Age estimates that Class I railroads will install 730,000 short tons of new rails in existing track in 1973. This will be an increase of 45,000 tons, or 6.6%, compared with 1972.

Renewals of new ties this year are expected to continue the mild downtrend started in 1972. The estimate, again based on projections submitted by most Class I roads, is that these railroads will install 19,500,000 new crossties in existing tracks in 1973. This will be a reduction of 900,000 ties, or 4.4%, compared with 1972. Even so, it will be the third highest figure since 1957.

The figure giving the total projected tie renewals for this year is somewhat misleading in that it presents a distorted view of projected tie renewals for the majority of roads. Figures on the tie renewals planned for 1973 were given by 30 railroads. Of these, 19 expect to increase their tie renewals this year, four expect them to remain about the same. Only seven indicate that they will put in fewer crossties this year. These latter roads are mostly the larger lines, and an astonishing fact is that the expected decline of 900,000 ties in 1973 can be accounted for by an expected reduction on a single large road.

● **Needs not being met.** At their present level, and in spite of the increases of recent years, tie renewals are running far short of actual needs. Based on a service life of 35 years for treated wood crossties, railroads should be inserting about 26 million such ties each year. This means that present renewals are running far short of the tie insertions necessary to keep the tie condition from deteriorating. On this basis, therefore, it would not be surprising to see the tie-renewal curve resume its climb in the next few years.

For that matter, insertions of new rails are also running far below requirements. Based on an average life-cycle of 60 years, railroads should be inserting more than two million tons of new rail per year just for replacement. This would require total annual renewals of new rail about three times the amount presently being inserted.

The ASTRO report made a strong case for substantially higher rail and tie-renewal programs. The argument was that the programs were needed to place track in condition to handle the increased traffic load that railroads are expected to carry in future years. Suggestions for funding the increased costs were also made, but these would have required Congressional action which, to this date, has not been forthcoming.

Plans for track-surfacing in 1973 tell a story somewhat similar to that for tie renewals. The same 29 railroads that furnished figures on track-surfacing for 1971 and 1972 also say they plan to surface 38,780 miles in 1973. This will be a slight reduction (386 miles) compared with 1972. The decrease can be more than accounted for by a planned reduction in surfacing miles on a single large road (not the same one that is planning a substantial reduction in tie renewals).

● **Effect of FRA standards.** The question might now be raised whether, or to what extent, M/W activities are being influenced by the FRA Track Safety Standards. These standards went into effect Oct. 16, 1972, for all regulations except those having to do with crossties and track geometry, which will become effective next October 16.

Apparently, the safety standards have had little effect so far on M/W programs. A group of top engineering officers were asked this question: Have your projections of M/W work for 1973 been increased due to requirements of the FRA Track Safety Standards? Of the 22 roads from which replies were received, a surprising number—14—indicated that no increases were required as a result of the safety standards. A typical answer runs something like this: "It does not appear that increases of a significant nature will be required as a result of the adoption of the FRA Track Safety Standards."

Of the eight railroads that indicated the safety standards were having an effect on M/W planning, a number were careful to point out that such planning

(Continued on page 54)

C&S: Big spending year shapes up

By ROBERT W. McKNIGHT
System Controls Editor

Equipment manufacturers and system control suppliers should find 1973 a satisfying year. Total spending for such material by U.S. and Canadian railroads will amount to some $345 million, an 8% increase over last year. Transit authorities are planning to spend $71.7 million, a 106% increase over the 1972 figure.

● **More signal money.** One of the big "if's" is that of passage of the Federal Highway Act, which in the '72 version had a requirement for 5% must spending by states on improvements in highway grade crossing protection. The new Congress is expected to pass a highway act which will retain this crossing item.

A battle is expected to continue over tapping the Highway Trust Fund for mass transit funds, but this is not considered an obstacle to crossing protection. Also, some experts predict that mass transit may receive 1 cent of the Federal gasoline tax as its share of highway funds. This could provide additional funding for transit projects, which in '73 spending plans look very good.

U.S. and Canadian transit authorities are planning expenditures in 1973 as follows: Communications up 18%, data processing up 382%, signaling up 109%. All these rises are based on comparison with 1972 spending plans. Big increases are caused by Washington's subway system, now reaching the stage of installing control systems equipment; BART's operations; and several other transit systems moving heavily into data processing for record keeping and day-to-day operations.

● **Communications rises.** Communications spending increases for '73 are planned by both railroads and transit authorities. Biggest impetus is the use of the computer in teleprocessing systems.

Indications are that railroads will continue to buy their own telephone exchanges and interconnect them with the public telephone network. Railroads have been allowed limited interconnection with the public network on the basis that such interconnection—allowing a call to be made from a railroad telephone to a phone owned by the telephone company (a rail officer's home, for example)—was used only for railroad business and therefore in the public interest.

The Federal Communications Commission has made interconnection wide open, in that a user may supply his own equipment to be connected to the public telephone network. As of now, however, railroads and others must use telephone company approved signaling and control devices so no harm will come to the phone company network.

● **Rails as telcos.** Railroads with extensive microwave systems may find themselves in the fortunate position of going to the "right places" and being able to offer communications services to others. Southern Pacific Communications Co. is an example of a railroad—SP Transportation Co.—forming a subsidiary to provide communications services. SPC has received FCC approval for its Los Angeles-San Francisco-Oakland section to provide such service. SPC has filed applications with FCC to provide communications service from Portland, Ore., via San Francisco and San Diego to Houston, Tex., and St. Louis, Mo. Basically, SPC will use the railroad's towers and buildings of its rail microwave system, but will buy microwave equipment to operate in the specialized common carrier band.

A few railroads are seriously looking into the possibility of using these specialized common carriers for linking off-line traffic offices to their headquarters. Although this communications service is often handled by American Telephone & Telegraph Co. and Western Union, specialized common carriers may offer lower rates. However, they do not offer interconnection into the public telephone network that some railroads feel is a decided advantage for using telephone company facilities.

● **More for the EDP dollar.** Newer and larger computers have not always been the answer for handling data processing. Most railroads are trading up for faster computers and ones with larger memories and multi-processing capability. Some are hiring software or management consultants to look into their data processing operations.

Often it has been full-speed ahead to get computerized, and now many roads are finding new and improved programs can be developed for more efficient data processing. Some came into this by accident—they had to reprogram when going into operating systems with the

Total 1973 RSC market:

Capital Spending
U.S. Railroads

Communications	$35.7 million
Data processing	2.2 million
Signaling	27.7 million
Total	**$65.6 million**

Capital Spending
Canadian Railroads*

Communications	$31.8 million
Data processing	1.4 million
Signaling	8.3 million
Total	**$41.5 million**

Capital Spending
U.S. and Canadian Transit

Communications	$10.1 million
Data processing	0.8 million
Signaling	25.3 million
Total	**$36.2 million**

Non-capital Spending
U.S. railroads

Communications	$52.5 million
Data processing	71.4 million
Signaling	41.5 million
Total	**$165.4 million**

Non-capital Spending
Canadian Railroads*

Communications	$46.2 million
Data processing	13.1 million
Signaling	12.5 million
Total	**$71.8 million**

Non-capital Spending
U.S. and Canadian Transit

Communications	$ 4.7 million
Data processing	17.5 million
Signaling	13.3 million
Total	**$35.5 million**

*Canadian National Telecommunications and CP Telecommunications are communications common carriers in Canada.

Note: Capital spending, as used here, refers only to planned equipment outlays and does not include related costs. Non-capital spending includes leased equipment costs.

Automatic car identification is a major item in railroad plans for this year

370 series computers. Others found that even with giant computers, such as the 370/165, for example, there is a limit to the amount of data processing that can be done on a computer, not to mention the need for increased staff and even increased work in data collection.

● **EDP trends in '73.** In general, railroads and transit authorities will be refining computer programs and general fine-tuning of systems analyses to make data processing more efficient. Other trends shaping up in '73 include:

—Reducing the number of reports required by operating personnel. Also, a general reduction in the number of computer-produced paper reports.

—More computer-produced microfilm reports, and a general increase in use of microfilm in the areas of tariff printing and usage. Microfilm will find increased use as a storage medium for waybills and other pertinent records.

—Increased use of intelligent, remote terminals, especially in yard offices, to provide edited material for input to a central computer.

—Increased use of time-sharing for in-house work by various departments of railroads. Also, expansion of time-sharing using computers outside the railroad.

—Increased use of optical character recognition devices to provide automatic input to computers of data from such things as accounting records, waybills, and payroll documents.

● **Aci comes of age.** 1973 will see major work accomplished by many railroads for automatic car identification. The Chicago terminal project will be in full-swing with initial reporting to member roads from the Chicago Railroad Terminal Information System, Inc., project. Data from some 109 aci scanners will feed into a computer to provide complete reporting of all train movements. Known as the Chicago General Managers Association aci project, it is expected to be fully operational sometime in 1974.

Tentative plans for '73 reported in a Railway Age survey indicate that upwards of 50 aci scanners will be installed, excluding the Chicago GMA project. Major areas of aci installation center in yards and terminals, to provide for inventory control of freight cars.

Working with a mini-computer, Canadian National can provide an inventory system for a 10,000-car yard for about $70,000. This will make the computer-aci combination economical for flat yards as well as for retarder classification yards. Kansas City Southern should place its Deramus yard, Shreveport, La., aci system into operation this year. There, aci scanners working with wheel detectors and a mini-computer complex will provide complete freight car inventory in a flat yard, as well as producing several operational and management reports. The yard computer will interface with the road's central computer in Kansas City via microwave communications.

● **Mini cpu's grow.** There will be increased usage by railroads and transit authorities of mini-computers.

Two approaches to yard controls are well under way: (1) use of mini-computers or process control computers to handle paper work, retarder and switching functions; (2) use of conventional computer or mini-computer to handle paper work, i.e., car inventory and associated information processing; and a separate mini-computer process controller to handle retarder and switching controls.

Southern Pacific is bucking the trend with its new Colton classification yard. Terminal control will be from San Francisco via microwave and TOPS (Total Operations Processing System). Process control computers at the yard will provide only speed control and automatic routing of cars to classifications tracks. All instructions for yard operations and paper work handling will be carried out in San Francisco headquarters.

● **Signaling steady.** Although preliminary figures indicate a drop in expenditures for signal systems by U.S. and Canadian railroads, there appears to be no slackening off in the workload. Indications are that 1,000 route miles of centralized traffic control will be installed, slightly over the 962 miles for 1972. Several strong trends in signaling will continue in 1973:

—Installation of dragging-equipment detectors in combination with hotbox detectors.

—Replacement of attended interlockings with automatic interlockings or traffic control systems.

—Lengthening of sidings in centralized traffic control territory to hold 190-200 freight cars.

—Upgrading of retarders in yards to handle freight cars having gross weights of 160 tons.

—Installation of audio frequency overlay circuits at existing crossing protection sites before laying welded rail, thus eliminating need for insulated rail joints.

—Installation of pulse- or other coded-type track circuits in signal territory to reduce the number of insulated joints required, especially where welded rail is to be installed.

Preliminary figures indicate that railroads during 1973 will install about 1,000 road miles of ctc. Several roads are installing reverse signaling on double-track sections of mainline and providing ctc-type controls to improve freight train schedules between major terminals.

Another trend in signal work is the use of consulting firms for circuit design and specification preparation, and total signal system design. A shortage of skilled circuit designers—a skill not taught in schools—has fostered the turn to consultants. With Federal funds available for transit signaling, consultants are often used not only for design work but because "they know their way around UMTA," reports one transit signal officer.

With the ever-present drive to reduce manpower and cut costs, many railroads are asking manufacturers of signal equipment to design, install and generally provide a turn-key type of signal installation. This is increasingly done where highway grade crossing protection and classification yard projects are under way. This may well increase under pressures from Federal and state agencies for more crossing protection installations.

● **Transit spending to double.** System controls spending plans for U.S. and Canadian transit authorities should reach $71.7 million in 1973, up from $34.8 million last year. New highs will be reached in signal systems. Also high on transit officials' purchasing lists is two-way radio for vehicles, buses as well as transit cars, running on steel rails. Also of continuing importance is the providing of police with portable radios and giving base station coverage to the men on the beat. Chicago Transit Authority is planning to expand its bus-monitor system by installing 120 more wayside transmitters ("electronic signposts") that provide passing bus identifications to a central computer for operations monitoring.

Data processing activity in transit is gathering momentum with the partial opening of the BART system in the San Francisco area, as well as stepped-up operations of other transit systems to cut operating costs through mechanization and improved paperwork handling.

On the signal side, automatic train operation is the norm for new transit systems. Existing systems are modernizing with new cab signal and train control systems. ■

THE OUTLOOK FROM WASHINGTON—p.48 ▶

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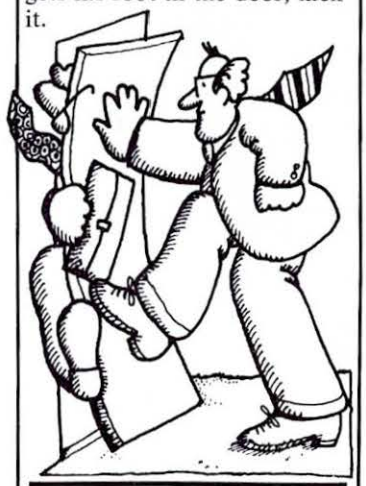
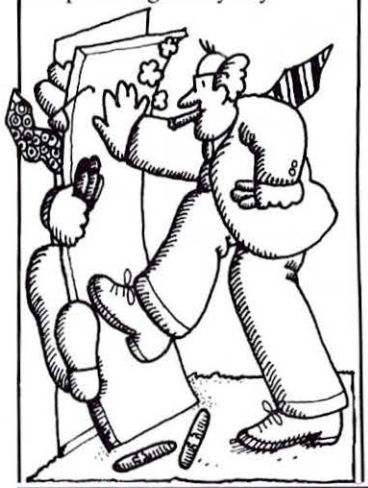
1. INSIST ON AN APPOINTMENT.

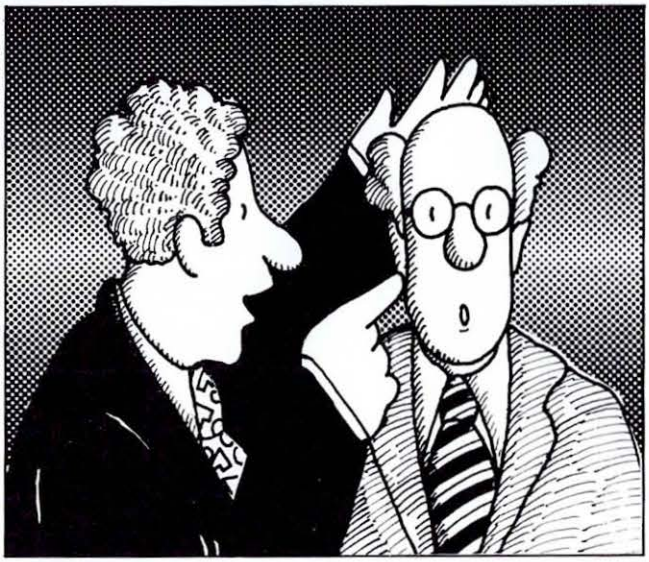
Be kind, but firm. If a salesman without an appointment gets his foot in the door, kick it.



2. WATCH OUT FOR HAVE-A-CIGAR & HAVE-YOU-HEARD-THIS-ONE OPENINGS.

If a smoke and a joke is all the salesman has to show you, show him to the door. But keep the cigar anyway.





3. FIND OUT IF HE KNOWS HIS BUSINESS

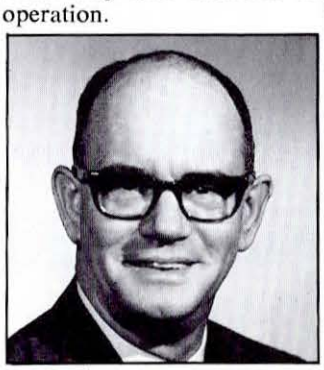
Just ask him a few pointed questions on what's happening in the transportation industry and about new advances his company is making in areas that relate to you. For example: a) What is his company doing that his competition can't do? b) How much has his company spent on capital improvements and new equipment which could serve to help your company? c) If tin whistles are made of tin, what do they make fog horns out of? Throw this one in to see if he's listening at all.

4. IF HE KNOWS WHAT HE'S TALKING ABOUT, TELL HIM YOUR DISTRIBUTION PROBLEMS.

Don't beat around the bush. Tell him what service you're getting now (from his company and others) and what you like and don't like about it. Now ask him what he can do to improve it.

5. NOW . . . LET HIM TALK

You're a professional at your job. If he's a pro at his, he should be able to offer you some good workable solutions to your distribution needs. He may be able to save you time and money (which is the name of the game) with improved services, new routes, modes, scheduling and methods of operation.



Joe Austin

Follow all the above rules and you'll be able to get more out of the transportation salesman knocking at your door. But Joe Austin, Mo-Pac's vice-president, traffic, has another idea.

"After all of this, it becomes rather obvious that the easiest way of getting the most out of a transportation salesman is to get the right man in the first place. We think that man is the one from Mo-Pac, naturally, and we're making sure of it.

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evenings, to study under the AST&T program, and to prepare for certification as an ICC practicioner.

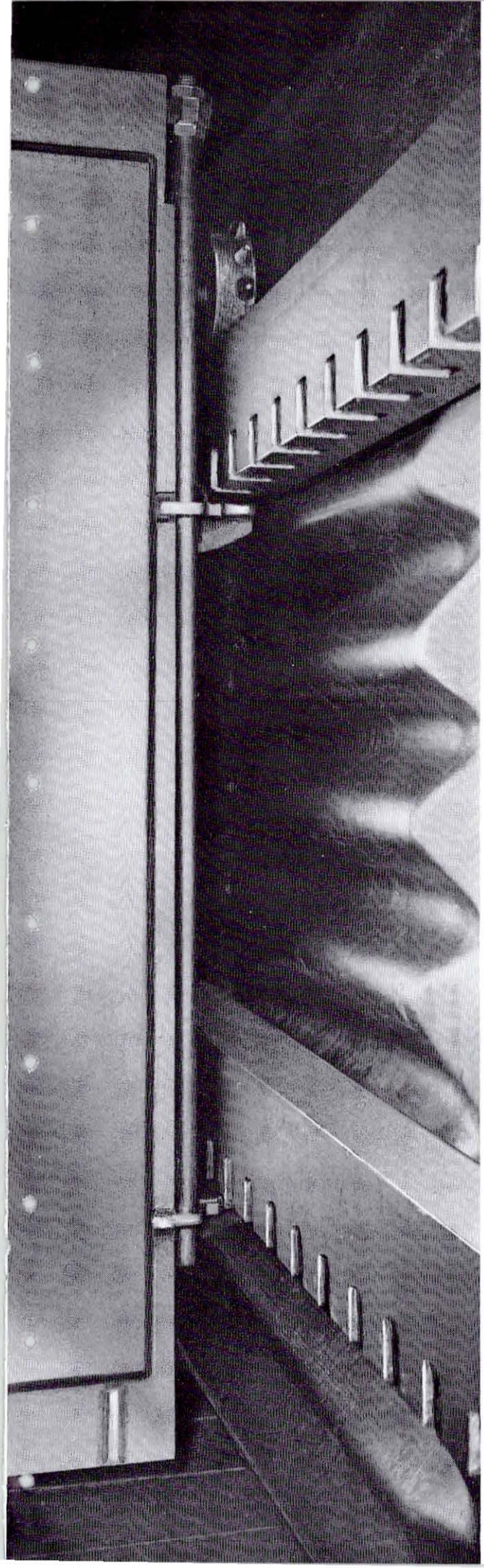
"We'd like to suggest that when the Mo-Pac representative calls for an appointment, you see him. We believe you'll be impressed with his expertise in his field.

"You see, we figured if we did the most for our salesmen, they could do the most for you."

mo-pac

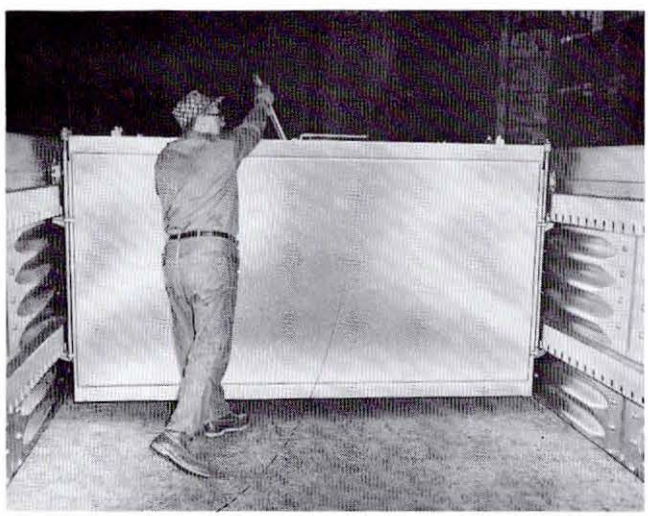
Missouri Pacific Railroad
Texas & Pacific Railway
Chicago & Eastern Illinois R.R.
Missouri Pacific Truck Lines
Texas & Pacific Motor Transport

Circle 20 on coupon page 57



Stanray's Automatic Locking Bulkhead

Super tough. Yet, one man can push it around.



Cuts set-up time to a fraction. One operator can easily move the bulkhead and lock the bulkhead into position with a minimum of time and effort. He simply raises a handle, and easily rolls the bulkhead to its new position (reset in 2-in. increments). When the handle is released, the bulkhead automatically locks into the belt rail. All of the locking mechanisms are gravity activated.

Tests prove Stanray's new bulkhead has an ultimate strength of 115,000 lbs., and a yield strength of 83,000 lbs. The 9-in. thick framework and heavy cast steel locking members provide this bulkhead's super toughness.

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Take reflective properties. The MAClite 7200 series is a smooth surfaced retro-reflective sheeting, with wide angle reflective properties. Which means it's visible at long range, even on angular approaches. And it retains over 90% of its reflectivity when totally wet by rainfall.

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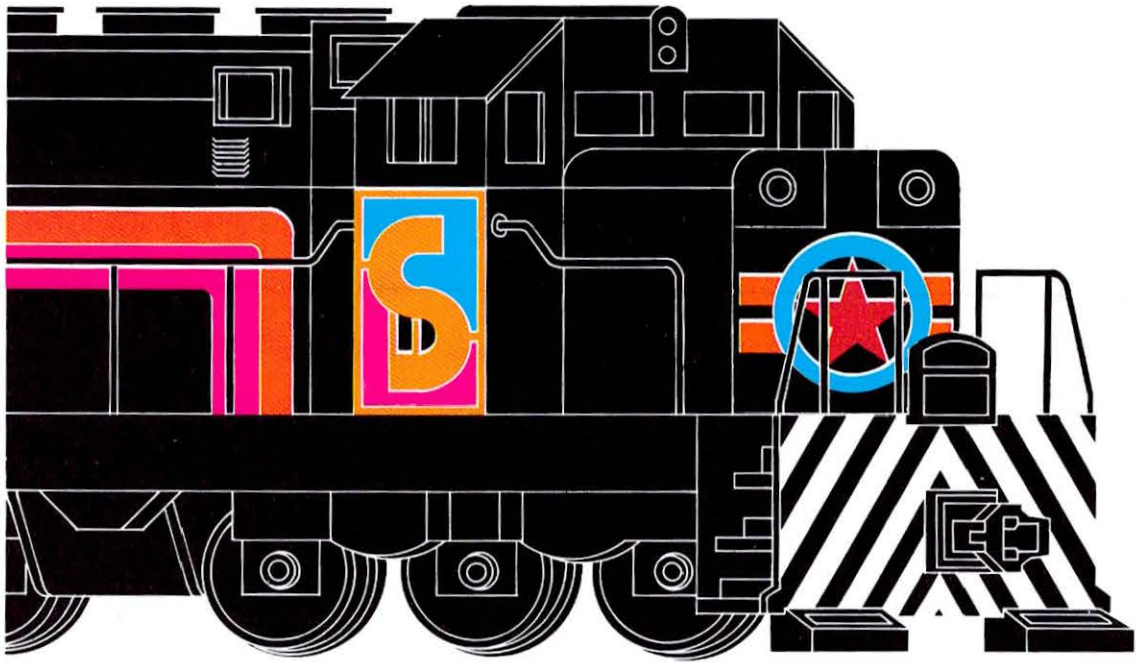
Another thing. The liner releases easily. It eliminates problems during application like stretching and damage that hard release liners can cause, especially in hot, humid weather.

MAClite 7200 reflective sheeting comes in a full range of colors. Is available in stock rolls and custom orders. And pricing is competitive. Probably even better than what you're used to.

But find out for yourself. Ask your MACtac representative for full details on the other choice, MAClite 7200 reflective sheeting. Or write the Morgan Adhesives Company, Film and Decorative Division, 4560 Darrow Rd., Stow, Ohio 44224. Or call (216) 688-6061.



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1973 OUTLOOK

Washington: In a crowded legislative

By REID BEDDOW, Washington Editor

"I know he is a railroad man. He gets up early in the morning."

W.C. Fields

The 93rd Congress had barely been gaveled into session Jan. 3, when, in the House, three rail bills were introduced. There are already indications that the number of railroad bills introduced this year will set a numerical record, exceeding even last year's copious legislative solutions to a broad array of rail problems. Industry leaders in Washington are ready for the onslaught. But there is no doubt which bill their eyes are most firmly fixed upon, and like the film character described by W.C. Fields, they are rising very early these days to nudge it along.

The bill is the proposed Surface Transportation Act of 1973, end-product of three years' hard work, some disappointments, and much hope on the part of rail leaders. The prize it contains is a $5-billion Federal aid program for railroads.

The decision to seek such aid, taken in 1970, was the reversal of decades-old industry policy. If enacted, STA would be the first large-scale government aid extended to rails since the 19th century. At that, its $5 billion is a relative drop in the fiscal budget compared with the $85-billion shopping list commercial airlines recently presented to Uncle Sam for their survival needs into the 1980's.

Such a rail aid bill was almost a reality last fall. After lengthy and exhaustive hearings throughout 1971 and 1972, bills embodying rails' STA proposals were poised in September for Senate and House floor votes. Then, a skittish 92nd Congress adjourned for the general election.

Rails approach the new 93rd Congress with a distinct air of optimism. They have solid reason to. But there are looming pitfalls which are not reflected in the official statements of rail leaders and rarely in their private views. The fact remains, there are plenty of anti-rail Congressmen who are lying in wait to ambush industry-backed legislation, hobbling and crippling its provisions through the amendment process. This was the fate of proposals last year which sought new ways to finance rolling stock.

An FRA official expressed his anxieties about what Congress will do this year with the uncomfortable prediction, "Nobody, but nobody, really knows what's going to happen."

But rail leaders have ample reason for cheer. Two developments give solid grounds for optimism.

Development number one is the commitment of Chairman Harley O. Staggers of the House Interstate and Foreign Commerce Committee to make STA his committee's first order of business. A new bill, similar to last year's H.R. 16281, will be introduced in the House under his name. More importantly, the legislation when approved by the full committee will bear his endorsement.

WHAT THE 1973 STA WOULD DO:

1. Create a Revenue Financing Division within DOT. This agency would provide Federal guarantees for 15-year loans to regulated surface carriers, such loans not to exceed a total of $2 billion. For rails, the loans would cover track whose usage exceeds 5 million ton-miles a year, signals, switching, and terminal facilities, communication and power systems, bridges, tunnels, and other surface structures but not rolling stock.
2. Create a Federal Railroad Equipment Obligation Insurance Fund administered by DOT which would insure interest and the unpaid balance of $2 billion in equipment paper. Funds would be created by a 1% premium on the principal. Financing for rebuilt cars may not exceed one-third of the number of all cars financed. Provisions would include leasing as well as outright purchase.
3. Authorize $35 million for DOT aid to rails for a national rolling stock scheduling and control system.
4. Ban discriminatory state and local taxation of carrier property.
5. Permit rails to abandon uneconomic lines upon 90-day notice to ICC. ICC can delay abandonment from six months to a year, but must grant abandonment if revenues fail to cover variable costs of the line. Requires rails to inform ICC of all lines which originate or terminate 35 or less carloads during one year.
6. Instructs ICC to identify traffic moving at rates less than variable costs of service. Directs ICC to order such rates raised to level of variable costs. Directs ICC to develop procedures for interim rate level adjustments that can be awarded rapidly pending findings of major rate cases.
7. Directs ICC to establish standards and procedures for rate levels adequate to cover operating and capital costs, including return on investment.
8. Repeals Section 22 of the Interstate Commerce Act which gives lower rates to government.
9. Directs ICC to establish nondiscriminatory rates for the transport of recycled solid waste materials.
10. Permits ICC to submit budgets directly to Congress.
11. Requires domestic water carriers of dry bulk commodities to publish rates.
12. Directs ICC to study rate bureaus and submit a report to Congress on their future.

hopper, STA remains the big one

In itself the Staggers promise has revolutionized the outlook for passage of major rail legislation. As a practical matter, the House is much slower in clearing bills than the Senate. Time after time, important rail bills have cleared the Senate, only to wither away pigeonholed in the House. Further, the seniority system is much more entrenched in the House than in the smaller Senate.

Though Senate Commerce Committee Chairman Warren Magnuson may be one of the two or three most effective legislators in Congress, though Senate Transportation Subcommittee Chairman Vance Hartke may be one of the most productive of ideas, Chairman Staggers—along with Chairman Wilbur Mills of Ways and Means and Chairman Ray Madden of Rules—wields a degree of power that in certain areas is second only to that of the President of the United States.

House chairmen in fact decide what legislation will be considered by their committee, in what order, what witnesses will be heard, and when bills will be reported. A Senate committee by comparison is virtually a New England town meeting.

The hope now is that STA can be passed by the full House by next summer. After the House acts, the Senate will take the bill up. STA could be law by next fall.

Rail leaders are thankful that the Congressional hearings of the last two years remove the necessity for lengthy public hearings this year. RPI President Nils A. Lennartson notes, "We've planted the seed, nourished the roots, and sprouted the stalk—now we've got to grow the leaves and open the buds."

This horticultural image is apt. Most of STA's legislative spadework is already done.

It is understood that new language in the forthcoming House bill will be minimal. Rep. Brock Adams (D-Wash.) rewrote and tempered STA all last year, culminating in the H.R. 16281 version which is the model for this year's bill. A new section may be added on rates as a concession to DOT. Labor reportedly is content with the protective language (after extracting a rail promise to work jointly with the unions in resolving the Railroad Retirement Fund mess).

Development number two is the forceful leadership DOT is now giving to STA. FRA Administrator John W. Ingram, it is known, gained the approval of DOT Secretary John A. Volpe to lend Administration support to the 1973 STA, either in an official DOT draft bill or via the Staggers bill. Incoming DOT Secretary Claude S. Brinegar will complete the endorsement.

DOT in fact is lining up shipper support for STA. A remarkable meeting held under DOT auspices Dec. 14 led to a compact among rails, motor carriers, water carriers, labor, and shippers. (Among the rail leaders present were AAR President Stephen Ailes, SP President Benjamin F. Biaggini, Southern President W. Graham Claytor, Jr., PC Trustee Jervis Langdon, and RPI President Lennartson.)

Though consultations are continuing, major groupings of shippers stand ready to back STA all out, on condition the surface modes support another major bill containing DOT's deregulatory proposals.

DOT served notice the Administration would vigorously press for enactment of a deregulatory program. Last year its support for reform was tepid. These reforms, dubbed "longhair" by an AAR source, will include "zones of reasonableness" within which rates can move up or down without ICC approval, removal of rate bureau antitrust immunity, and removal of entry restrictions into trucking.

Any degree of deregulation is explosive, and could rip apart the fragile alliance welded by the Dec. 14 meeting.

Many rail lobbyists, while publicly painting an attractive scenario for STA, are privately worried. Shipper support for STA in the House could easily turn to opposition in the Senate, if the modes are lukewarm in their endorsement of regulatory reform.

Labor, with pension and retirement reforms, contract negotiations, and the announced intent of seeking stiffening of the 1970 Railroad Safety Act among its political and economic goals for 1973, holds many cards.

(AAR President Stephen Ailes was heard at Christmastime praising the political clout of the Teamsters. Noting they "fight like hell" with management over contract negotiations, Ailes observed the Teamsters worked in tandem with motor carrier management on industry-wide issues.

(Other rail sources said the popularity of NRLC Chairman William H. Dempsey would help secure labor support for STA.)

The greatest single cause of uncertainty is the restlessness of the Democratically-controlled Congress. Key Senate Democrats are planning an aggressive, activist legislative campaign of their own. They have no intention of waiting passively while President Nixon sends up proposals and will strike out on their own.

While it is likely Congress this year will make changes in the bankruptcy laws, making reorganizations easier for corporations with huge fixed charges, the subject of emergency legislation for bankrupt or marginal railroads is likely to turn into a major headache for the industry.

Already, on Jan. 25 Democratic congressmen introduced a joint resolution calling for a Federal takeover of PC. This was in the wake of a PC trustee's New Year's statement saying Federal aid of between $300 and $600 million might be needed to make the carrier solvent by 1976.

One of the most closely guarded secrets in Washington right now is emergency railroad financing. Everyone wants to know what's in DOT Secretary-Designate Claude S. Brinegar's "transition book." This is the document prepared by Secretary Volpe to brief his successor and contains hush-hush FRA contingency plans in event of a PC shutdown or further bankruptcies.

At his confirmation hearings on Jan. 8 and 9, Mr. Brinegar remained diplomatically noncommittal about emergency rail legislation plans—and SST, diversion of Highway Trust money, a reported 50% cut in Amtrak's budget, any one of which will put DOT on a collision course with Congress.

Many observers feel that Congress and the Administration will become involved in such a power struggle that only the most essential legislation will be passed and that after long struggle, with the President using his veto powers right and left.

Where this combat will leave rail legislation is a good question. ■

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	SECTION NUMBER	DEPTH	WEIGHT PER FT.	AREA	X-X AXIS			Y-Y AXIS		
					I	Z	γ	I	Z	γ
		IN.	LB.	$IN.^2$	$IN.^4$	$IN.^3$	IN.	$IN.^4$	$IN.^3$	IN.
	Z-26 (41.2#)	$12\frac{15}{16}$	82.4	24.24	626.0	95.0	5.08	1075.8	102.4	6.66
	Z-26 (51.2#)	$13\frac{1}{16}$	102.4	30.12	771.4	113.8	5.06	1347.4	126.8	6.61
	MODIFIED Z SECTION	$12\frac{15}{16}$	82.4	24.24	626.0	95.0	5.08	766.9	111.0	5.63
	W.T.C. TUBESILL	14	88.2	25.93	769.0	110.0	5.45	769.0	110.0	5.45
		POLAR MOMENT OF INERTIA J = 1538 $IN.^4$ POLAR SECTION MODULUS Zp = 137.5 $IN.^3$								

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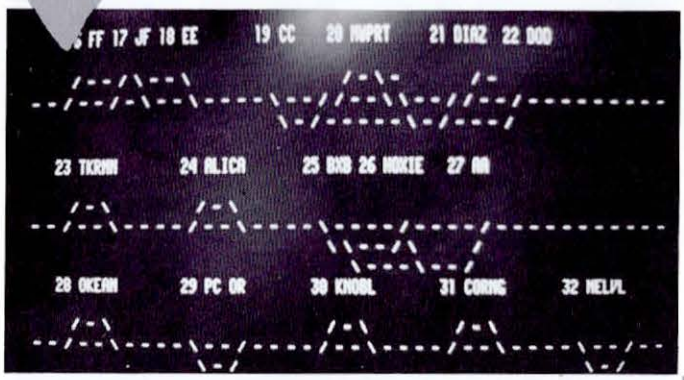


Centralized Traffic Control

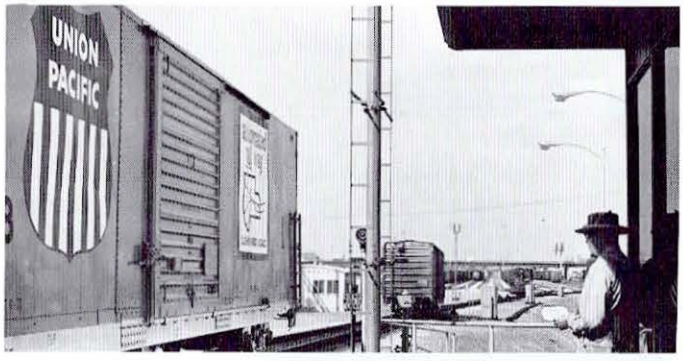
The latest GRS development is computerized video CTC, called Traffic Master II™. It combines the principles of pushbutton control with the capabilities of a digital computer. Cathode ray tube (CRT) displays replace the usual track diagram, while a compact keyboard replaces the former pushbuttons. One or more CRT's show the overall track diagram of the controlled territory – and display field conditions. The operator uses the keyboard to call up an enlarged track plan of a selected siding on a separate CRT, and to initiate controls to the field via the computer.

Rapid Transit

The Washington Metropolitan Area Transit Authority selected GRS to supply the automatic train control system for the first 36 miles, of an eventual 98 miles, of rapid transit to serve Washington, D.C., and suburbs in Maryland and Virginia. The installation involves automatic equipment for 37 passenger stations and onboard equipment for 300 cars. With the fully automated system, trains will move up to 75 mph, operating 90 seconds apart during rush hours – without human intervention.

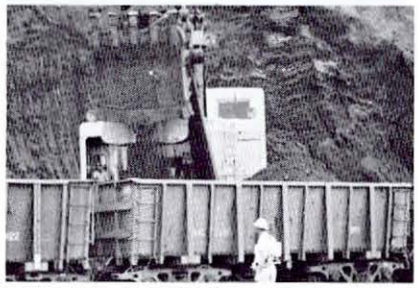
Personal Transit

The personal Transit – or people mover – system is a new concept in mass transit. It is characterized by a large number of small vehicles, closely spaced. GRS is supplying LTV Aerospace Corporation with the fully automatic vehicle operation system for the AIRTRANS personal transit system which will serve the Dallas/Fort Worth Regional Airport. The initial phase will include some 45 stations, approximately 12 miles of controlled guideway, and about 70 driverless vehicles.



Yards

The GRS Distributed Computer System utilizes minicomputers to control all phases of car classification. DCS is a completely modular, plug-coupled, interface system designed to work in conjunction with the minicomputer. The interface and associated minicomputer accomplish one specific piece of process control or subsystem function. The modules may be used in a new yard installation, or they may be applied to the upgrading of existing yards a function at a time over an extended period of modernization.



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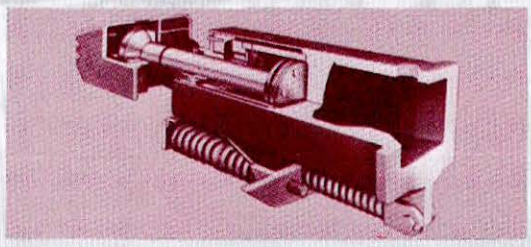

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For M/W, a bigger share of the dollar

(Continued from page 40)

was being done only within financial capabilities. Typical of such replies was this one from a chief engineer: "Our 1973 track-maintenance activities are projected toward requirements of the FRA Track Safety Standards. However, the funds that are available control the progress that can be made toward meeting the standards on this road."

Obviously, the matter of financing the work required by the safety standards remains a sticky question.

● **More spot work coming?** Statistics don't tell the whole story of what is happening in the M/W field. There are, for example, some trends in procedure and technology worth mentioning. One is an apparent increasing interest in performing more spot work on track as opposed to out-of-face work. An indication of this trend is the surprising response that greeted an announcement during the year of availability of a one-man, hand-held, gasoline-operated, tie-tamping tool. Formerly, such tools were offered by a number of manufacturers but were mostly removed from the market because of a decline in the demand for them.

Another manifestation of the trend toward spot work is the increasing interest M/W men are showing in equipment for spot surfacing and lining track as opposed to the larger production tampers. Could it be that such interest is being aroused by the requirements of the safety standards?

Another development has to do with the question of whether to take out old ties in one or three pieces. Many roads now cut the old ties into chunks to facilitate their removal from track. But reports are that the chunks create a disposal problem. On the other hand, as one track man put it: "We will continue to cut our ties in three pieces until someone comes out with a means of taking them out in one piece without disturbing the surface and line of the track." Some roads are handling the disposal problem through the use of machines that reduce the tie chunks to chips and discharge the small pieces onto the right-of-way.

Other developments especially noticeable today are:

—Continuing efforts on the part of machinery manufacturers to bring out new and improved M/W machines, particularly units for inserting new ties.

—The trend toward use of insulated rail joints—and other types of joints, too—that are assembled with structural adhesives.

—Efforts to determine the cause of cracks developing in concrete ties shortly after they are inserted. ■

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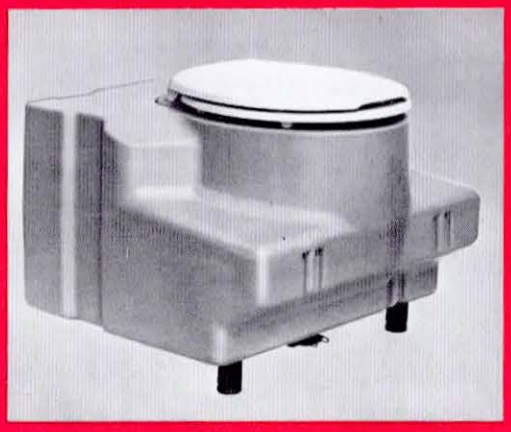

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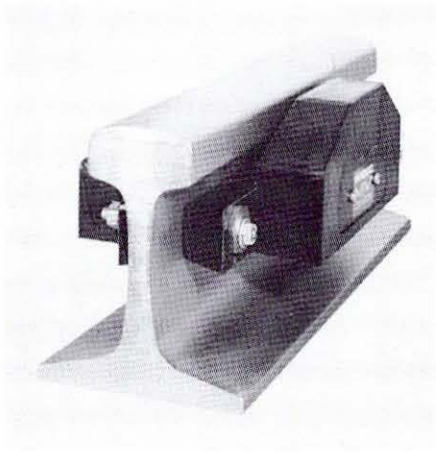
Circle 27 on coupon page 57

New Products Report



Wheel detectors do the job at speeds up to 100 mph

Two completely transistorized railroad car wheel detectors are available from WABCO's Union Switch & Signal Division. One (called Model WD-30D) is for directional application; the other (called Model WD-30) is for non-directional application. Both operate accurately at speeds up to 100 mph.

The WD-30D detector is designed for use in systems which require both a wheel count and an indication of car travel direction. It is said to be ideal for use in computer-controlled classification yards, for indicating car position and for monitoring and reporting. Equipment for the directional detector includes a two-piece detector head (see photograph), a 12-ft cable, and wayside electronics in a pedestal-mounted weatherproof box. A standard 5-in. by 7-in. printed circuit board contains the office logic. The board can be up to 5,000 ft from the wayside electronics and is suitable for mounting in a standard varipak card file. Detector heads are arranged around the rail to avoid possible damage from brake hose fittings or other dragging equipment.

The non-directional detector is for use primarily in industrial applications, to establish car location for dumping installations, car spotting, car counting, to activate rail oilers, for shove signals, to establish car location at customer sidings and other situations where direction of car movement is not important.

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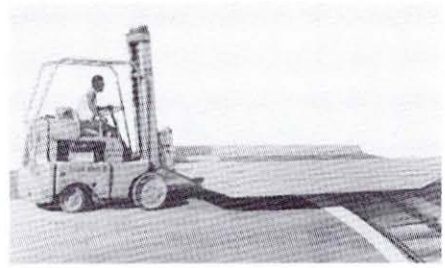
Mobile crossover bridges can be built to users' specifications

All-welded aluminum crossover bridges built to users' specifications by Rampmaster Inc. can be moved with a forklift to any location in a plant. The



bridges are engineered to meet users' requirements for such things as width, length and capacity. They are built of high-strength aluminum alloy extrusions. The bridges are hazard proof, with bright yellow curbs to prevent runoff. Decks are open-type serrated aluminum or steel grating, or diamond-pattern treadplate.

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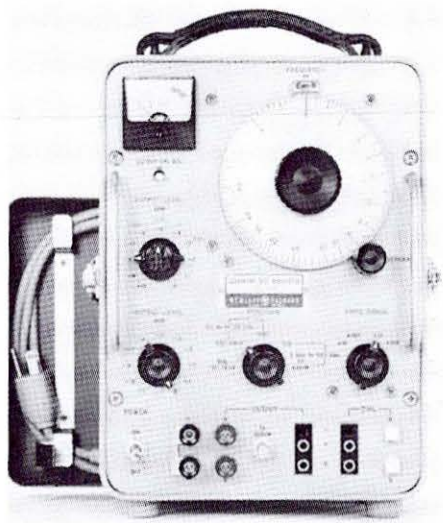

Test oscillator has wien bridge circuit

The Hewlett-Packard HP model 236A telephone test oscillator is a rugged, portable test set designed specifically to deliver transmission test signals into telephone carrier systems. Using the classic Hewlett-Packard wien bridge circuit, the 236A delivers extremely flat 50 Hz to 560 kHz calibrated signals into standard telephone impedances. Output is calibrated into 135,600 and 900 ohms in 0.1 dBm steps from -31 to +10 dBm.

Output of the model 236A is fully balanced and can be floated up to ±500 volts with reference to ground. Jack sleeves can either be grounded or floating for PBX and supervision.

A convenient set of clip posts allows connecting a lineman's handset directly to the line and dialing up a connection. Holding coils are provided to maintain

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the connection of 600 and 900 ohm circuits while test signals are being applied to the line.

The 236A can be operated either from its built-in battery supply, or from 115/230 volt ac line. Low current drain solid state circuitry results in exceptionally long battery life and makes the non-rechargable battery supply practical. A battery turn-off device in the cover automatically turns off the instrument when the cover is replaced.

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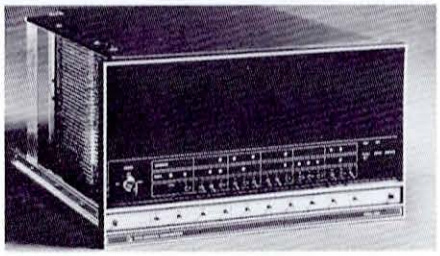


Minicomputer expands in 32K configurations

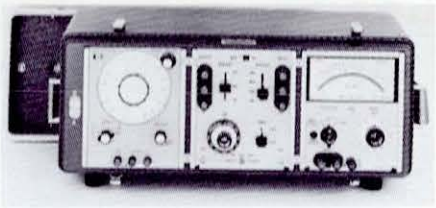
The standard Nova 1220 chassis from Data General Corp. is 10½ inches high and includes 10 slots for mounting printed circuit boards. The central processor occupies only one board, so nine slots are available for memory and interfacing. There is room for a full 32K of core memory, with up to five more slots available for interfaces to peripheral devices. Nova 1220 also provides convenient plug-in interfacing for commonly specified configurations that include IBM-compatible magnetic tape units, disc memories, Teletypes, and paper tape equipment.

The Nova 1220 has a full memory cycle time of 1200 nanoseconds. It executes arithmetic and logical instructions in 1350 nanoseconds. The base price of the Nova 1220 includes 4K 16-bit words of core memory, direct memory access channel, Teletype interface, programmer's console, built-in external I/O cable connector, and automatic interrupt source identification. Because data do not have to pass through the central processor, DMA channel operations take place at memory speed (833.3 kHz maximum transfer rate). Automatic program load and power monitor and auto restart are central processor options and require no additional subassembly boards. A turnkey console is interchangeable with the standard programmer's console.

Circle 63 on reader service card

Portable test set is for transmission lines

The Hewlett-Packard HP model 3550B portable test set is designed specifically to measure transmission line and system characteristics such as attenuation, frequency response or gain. It is particularly useful for lineup and maintenance of multichannel communications systems. Model 3550B contains a wide range oscillator, a voltmeter, and a patch panel to match both the oscillator and the voltmeter to 135-, 600-, and 900-ohm lines. These instruments are mounted in a combining case equipped with a splash-proof cover. In addition, the oscillator, voltmeter, and patch panel may be used separately whether they are in or removed from the combining case.



Circle 64 on reader service card

Hot-rolled sheet steel has high degree of formability

Tests of a new grade of hot-rolled sheet steel indicate it is well suited for use by, among others, producers of railroad and agricultural equipment and heavy machinery. The steel, combining a minimum yield strength of 80,000 psi with a high degree of formability, is available from Bethlehem Steel Corp. Called Ultra-Form 80, the sheet steel was developed by Bethlehem's research department to meet the needs of design engineers who, under pressure to reduce costs and component weights, are turning increasingly to higher-strength steels.

Key ingredient in the chemical composition of the new steel is titanium. That metal, combined with the controlled hot-rolling practices used in producing the sheet, imparts high strength with a minimum loss of formability. Ultra-Form 80 is available in thicknesses of .071 to .187 of an inch (thicker and thinner sheets are available on inquiry), widths of 42 through 60 inches, and in cut lengths up to 240 inches.

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New flame-retardant resin resists acids, bases, solvents

QuaCorr QX-300, a new high-performance, flame-retardant resin from Quaker Oats Co.'s Chemicals Division, is resistant to acids, bases, solvents, or combinations of the three. The newest addition to the QuaCorr line of corrosion-resistant resins, it is distinctive for its flame retardance, high temperature service and low smoke emission. QX-300 meets ASTM E-84 tunnel test flame spread requirement of 25 or less and can be used at higher temperatures than those tolerated by polyester resins.

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ALAMEDA BELT LINE-OAKLAND TERMINAL.—Phillip E. Copple, assistant superintendent, named superintendent, to succeed **Russell H. Robinson,** retired.

CHICAGO & NORTH WESTERN.—F.V. Koval, public relations director, retired Jan. 1.

CHICAGO SHORT LINE.—Edward A. Peloza named secretary, and **Frank A. Purpura,** treasurer.

MILWAUKEE.—Curtiss E. Crippen, vice chairman, retired Jan. 1.

NORFOLK & WESTERN.—Hobart L. Scott, Jr., assistant general manager of motive power and equipment, Roanoke, promoted to general manager of motive power and equipment, succeeding **Charles S. Patton, Jr.,** who retired Jan. 1.

SOUTHERN PACIFIC.—Milton A. McIntyre, assistant vice president in charge of personnel, retired Dec. 31, 1972, after 37 years' service.

TRAFFIC EXECUTIVE ASSOCIATION—EASTERN RAILROADS.—David M. Rogers appointed director of publication services, New York. Mr. Rogers was formerly associated with the **Interstate Commerce Commission.**

SUPPLY TRADE

James R. Higginbottom, assistant to the vice president-sales, **Kerite Co.,** has been named national railroad sales manager, remaining in New York.

Ronald Fry, a 1972 graduate of Princeton University, has joined the staff of **Railway Age,** New York, as an associate editor.

Saul Adler has joined **Railway Age** as marketing manager. He was formerly advertising promotion manager with Lebhar-Friedman Publications, Inc., and prior to that he was a promotion/marketing services writer with Harcourt Brace Jovanovich Publications.

R.E. Robinson has been appointed vice president-finance, **Pullman-Standard Divison** of **Pullman Incorporated.** He was controller-treasurer.

Allen M. Nail has joined **Microphor** as a

(Continued on page 95)

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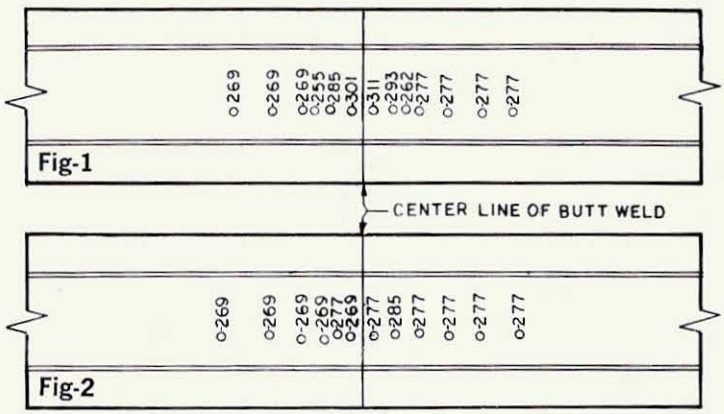

FIGURE 1: Illustrates a typical flash butt welded rail with hardened fusion zone—soft spots each side of the hardened area and normal as-rolled rail steel beyond. The BHN readings show typical variations in hardness that exist in all flash butt welded rail unless it has been normalized by the TELEWELD induction process.

FIGURE 2: Illustrates the BHN readings typical in a flash butt welded rail that has been normalized by the TELEWELD induction process.

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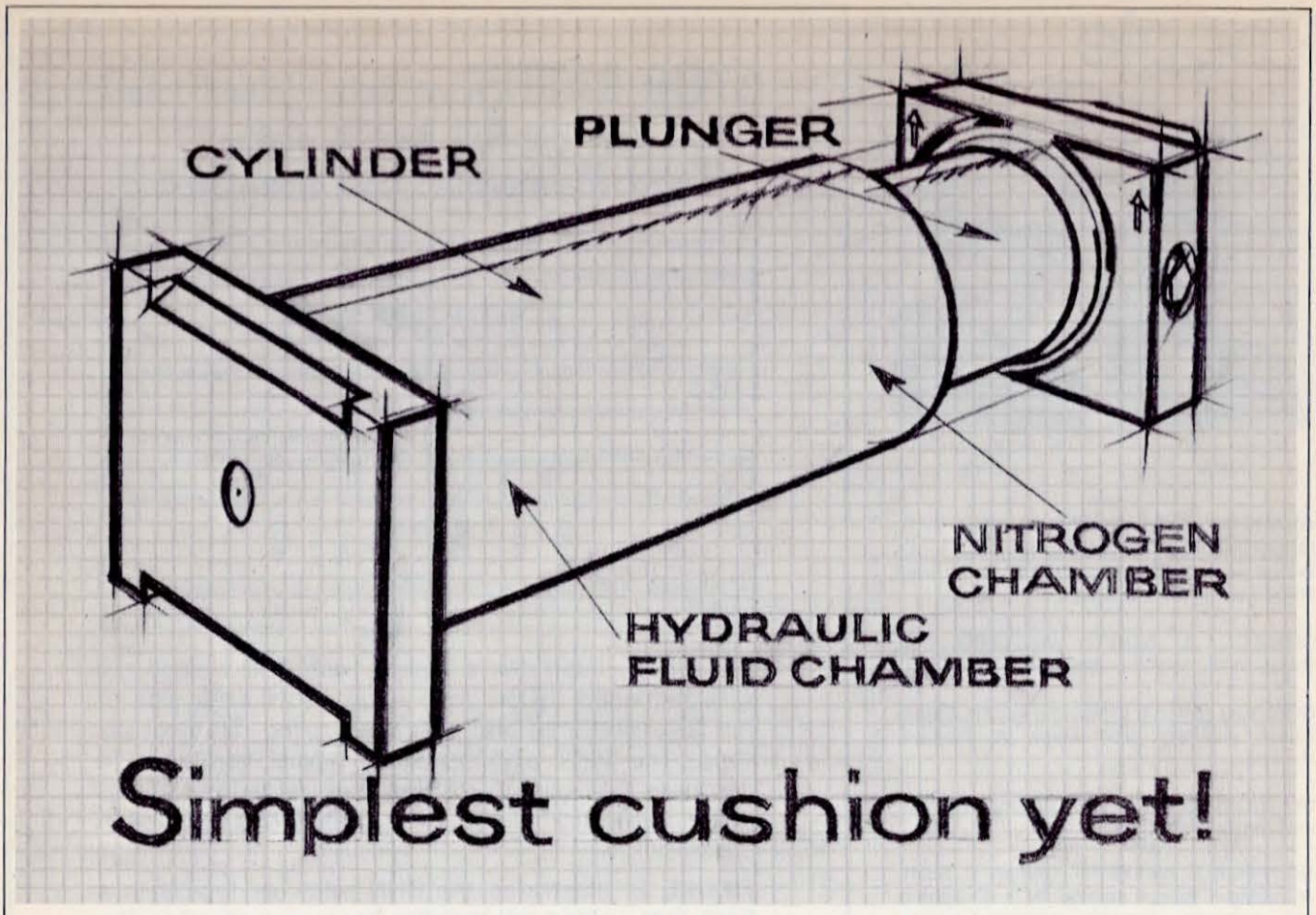

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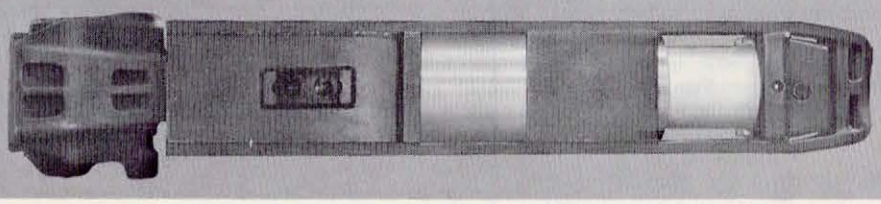

Labor/management:

Building on a firm foundation

By GUS WELTY, Senior Editor

Constructive steps were taken in '72—and the odds favor more of the same.

In 1972, rail management and labor put in the foundation for what can become a mighty fine structure—in which employers and employees can live together, doing the normal amount of at-home battling but usually working for the common good.

In 1973, management and labor will have their first big chance to work on the superstructure—and by yearend there should be a pretty good indication as to whether that "mighty fine structure" can really be built.

● **New year, new problems.** Based on what management and labor were able to do last year, the odds almost have to favor a continuation of the building process. But, there will be a new set of problems to contend with. Among them:

—Solutions will have to be found for the difficulties besetting the Railroad Retirement system. Here, the problem is not so much one of goals as it is one of methods. A Federal-commission study, in which management and labor participated, proposes a two-tier system of benefits—with the first tier providing regular Social Security benefits and the second tier built on top as a separate supplementary retirement plan. The commission, however, did not say how that second tier should be financed, except to observe that it should be "on an assured, fully self-supporting basis by contributions from the railroad community." Rail labor's stated position has been that management should pay the full amount needed to support Tier 2.

—Wage settlements will have to be reached with all rail labor organizations, which were free to come in with new demands as of Jan. 1. On the surface, at least, labor makes no connection between Railroad Retirement negotiations and wage negotiations. Management's view, however, is that dollars are dollars—and that if a Railroad Retirement agreement should provide greater employer contributions and smaller employee contributions, then that must be taken into consideration in any new wage settlements.

—In the wage-settlement context, both management and the organizations will have to consider Phase 3 of the Administration's economic-guideline program. In the most recent series of contract talks, the industry pattern was set before controls were imposed. The Pay Board—with some reluctance—has allowed scheduled increases to go into effect, even though they substantially exceeded the 5.5% standard set by the Board. Now, however, the whole negotiating process will be taking place under restraint. When new wage demands began coming in after Jan. 1, though, the organizations—at least in the early notice-serving stage—didn't seem to be paying much attention to guidelines or controls.

—Both management and operating crafts will be challenged to continue the work-rules modernization process begun last year. Thus far, the local-level implementing of rules changes has gone well. Now, however, change will be taking place against a backdrop of wage negotiations. And there is also the hard, cold fact of further major change to be considered: In many areas, this kind of change is tied to change in the basis-of-pay of operating employees. Intensive, joint studies of basis-of-pay are under way—but it is not yet known what they will show or when they will be completed.

—Some consideration will have to be given to what happens (or doesn't happen) on individual properties in individual situations. Penn Central's crew-consist dispute with the United Transportation Union is one such individual situation. Jersey Central's new and liberalized agreements with the operating brotherhoods represent another. Then, there is troubled Long Island and its strike-producing dispute with the non-ops to consider.

In the West, more than a few eyes will be on employee-owned Chicago & North Western as industry-watchers try to determine generally how employee-participation works and whether C&NW will be able to continue its programs of working out special agreements to cover special rail-service operations. And, there will be the continuing watch on Illinois Central Gulf, to see if the JOBS Commission can accomplish anything in the face of complications created by months of non-accomplishment, the Illinois Central/Gulf, Mobile & Ohio merger, and the inevitable tensions growing out of the tragic late-1972 crash of two ICG commuter trains.

● **First up:** On an industry basis in 1973, however, the first thing to watch will be negotiations on Railroad Retirement—partly because of a set of built-in early deadlines and partly because, as one observer puts it, the Railroad Retirement problem "is like an umbrella over everything else."

The economics are both simple and complex. When the Railroad Retirement System took shape, more than three decades ago, railroad employees could look down on workers in other industries. As rail labor's pension committee has pointed out, "We were decades ahead of Social Security, which only provided a minimal pension. Ours produced a high, liveable benefit for everyone in the industry, and we rewarded career-service employees."

But, times and conditions have changed. Railroad employers and employees have long been paying more into the system than employers and employees subject to Social Security, and the spread is getting bigger. And while it is true that Railroad Retirement benefits are also larger, it is also true that the fund is in danger of foundering. There are more people collecting benefits than there are paying into the fund, for one thing. Over the next 30 to 40 years, this may change and the employment line on the chart will probably cross the line representing retired employees to whom benefits are being paid. In the meantime, however, it is the Federal commission's conclusion that if things go on as they have been,

The current basis-of-pay study could solve an old and very perplexing problem

the Retirement fund will go broke along about 1987.

In the rhetoric that is the public accompaniment to negotiations, labor has made much of what has been done in other industries in the supplemental-pension area. It has been labor's position that the industry has a "moral financial obligation" which would involve railroad financing of Tier 2. Management has been less publicly vocal regarding responsibilities and obligations. But management spokesmen have called attention to ability-to-pay considerations. And management has made it clear that Railroad Retirement changes which increase the carriers' load and reduce the employees' will have to be taken into account in any wage settlements which are negotiated.

● **There's a timetable.** The deadlines are these: Early in 1973, a report must be made to Congress on what rail management and the organizations have been able to accomplish through negotiation. Just a few months later—on July 1—two presumed "deadlines" come up, one involving Railroad Retirement, and the other connected with possible new wage provisions. Under present law, three separate "temporary" Railroad Retirement increases mandated by Congress—totalling 45% without compounding—are scheduled to expire. On the same day, July 1, new wage increases could become effective—assuming that increases can be agreed upon and then approved standards may be set for Phase 3 of the economic-restraint program.

Increases above the standards will no doubt get a closer-than-ever look. While extenuating circumstances (prior-made agreements and productivity increases in contracts with the ops) got the industry and the unions through the current agreement without modification, that probably won't happen again. At the same time, there is some doubt as to whether new agreements can involve much more than wage boosts. And, perhaps, there will be fewer reasons, over-all, for postponing settlements.

Both the railroads and the organizations have a problem—productivity. Through new collective-bargaining agreements, it is going to be difficult to increase productivity among the non-ops. The opportunity for increase is there so far as the ops are concerned—but the question is whether the negotiators will have the kind of data needed if they're to make further quick and substantial progress toward modernization of work rules.

● **That old "pay" dispute.** At the heart of the problem is the simple fact that bases for paying operating employees are not yet susceptible to change. Together, management and labor have been working on what is described as an "enormous" study of the pay system. As one studier concedes, "This is the most complex thing we've ever worked on. It would be easy for a new industry, or one that's more simply organized, to put in new procedures. But this is an old industry. And, as the courts are fond of saying, we're not writing on a blank slate."

This seems to indicate a couple of things. One is that, while the carriers are not pulling back from their demands for modernization of work rules, any sweeping new changes may be some time in the future. A second, however, is that there is still an opportunity for further rules change—a kind of tidying-up, plus—growing out of the 1971-72 agreements with the ops. And a third is that the current basis-of-pay study gives some reasonable hope of producing a workable solution to this old problem—if only because it is the most-concerned parties, management and labor, that are making the study.

And, with all this, what else will be happening in 1973? Well, there will be questions concerning labor's support for the industry's legislative goals, and there will be other questions regarding the industry's stance on anti-strike legislation.

Toward the end of 1972, rail labor joined in backing the Surface Transportation Act as supported by the railroads. At this point, there is no indication that labor's leaders will back away from the position then established—but like a number of other things, this may depend on how things go in national and/or local situations relating to other problems.

As for the other question, on anti-strike law, that also has no current answer—except for a feeling that this time around the railroads will not be in Congress backing a plan of their own. Not, that is, unless things break down all around and there is some sort of major crisis developing. In the 92nd Congress, transportation-industry anti-strike proposals got farther than most people thought they would—an amendment that came close to passing the Senate and a bill that, some said, had the votes for Senate passage.

For election or other reasons, however, the Administration lost interest in such legislation—and it is not really considered likely that there will be Administration support for similar proposals at least for some time to come. Meantime, a few people are remembering a comment from the top of the labor-movement pyramid—a comment to the effect that there may be better ways to settle differences than by striking.

● **Think '73 and think positive.** When it is all said and done, however, the best hopes for 1973 rationality may lie with (1) the people handling what happens in '73, and (2) the undeniable record of '72.

People? National Railway Labor Conference Chairman William H. Dempsey, the NRLC staff and the Carriers Conference Committee. UTU President Al H. Chesser, Brotherhood of Railway and Airline Clerks' President C.L. Dennis and other of labor's leaders who are both thinking and influential. On the local level, the people on both sides who have worked with the ops' agreements and who thus know that meaningful change can really be made to happen.

● **The '72 record?** Let Bill Dempsey explain: "With the UTU wage/rules agreement, we have not had the complaints we expected; time claims have been below expectations; so have the arbitrations that might have been required had the parties not been able to agree at the local level." Since this agreement came into being only after a series of strikes, Dempsey reflects, "One might think that that didn't give any great optimism about the future. However that may be, the administration of that contract has been carried out with much less trouble than might have been expected. This has been due in a very important way to the fact that the parties didn't simply execute the contract and stop there. Rather, we have had continuous negotiations with union representatives with respect to the interpretation of some of the very difficult and ambiguous provisions of that contract. The result has been a much smoother implementation than we would have anticipated at the start."

So, then, look at it this way: In terms of cost increases, the industry can stand only so much and labor knows it—and "so much" is not much. Railroad Retirement has to be settled—hopefully, amicably and on a basis that recognizes such a settlement as part of a package. And all those new wage agreements also then have to be made. As one insider puts it, "So far as I know, all of us are committed to making a settlement as promptly as we can, certainly by July 1. We may fail. But we have joint purpose. We'll be trying." ■

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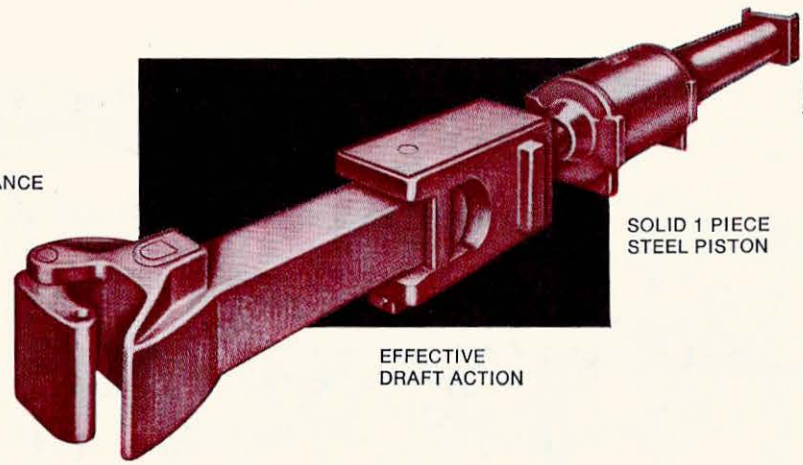

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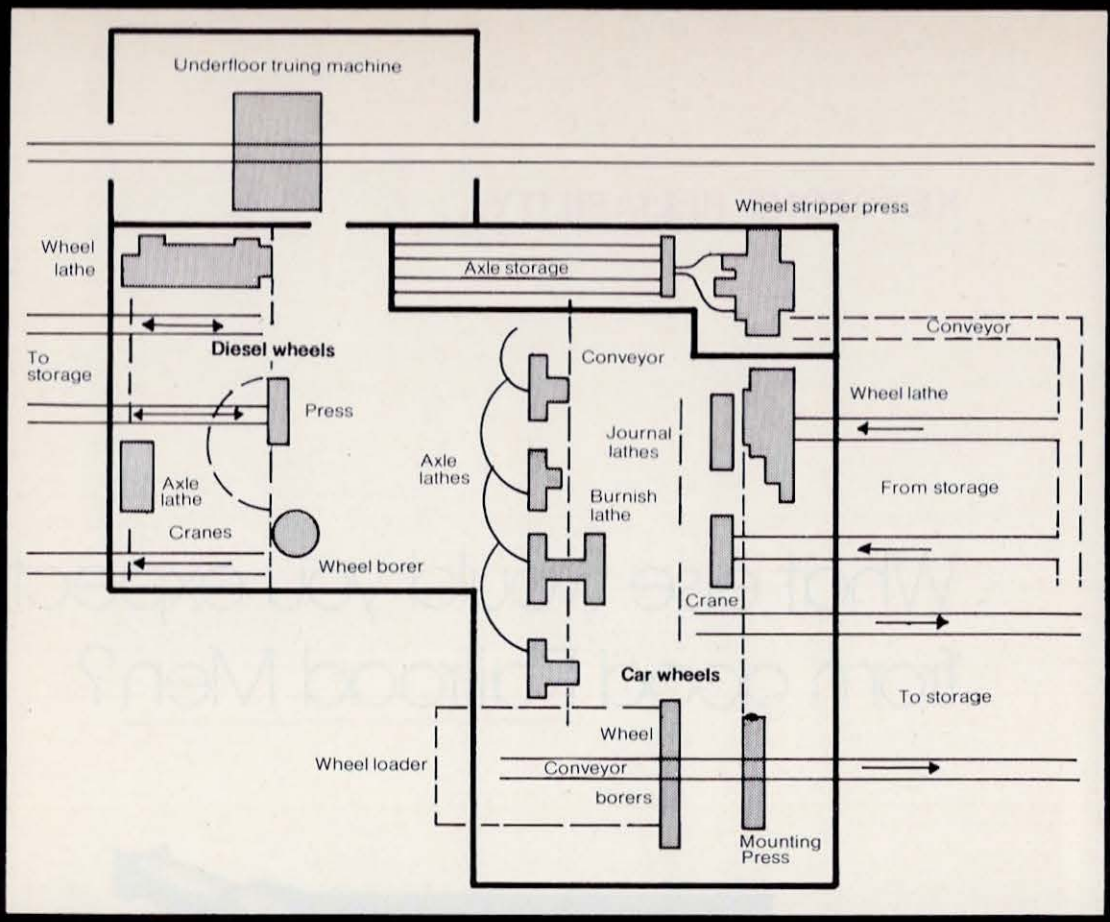

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1972 REVIEW Eastern problems cloud an

If you were a college professor grading 1972 on behalf of the railroad industry, you would probably give it a C+ or maybe a B- —in other words, a passing grade but not a great one.

In the over-all, '72 had its great moments, its times of significant accomplishment. But it wasn't a consistent performer. It was, you might say, something like a promising sophomore—with a lot of potential, but with too much of it unrealized.

These were some of the key factors to be considered:

—Freight-traffic volume and freight revenues were up. So were net railway operating income, ordinary income and rate-of-return. For a good number of roads, '72 was not a bad year at all in terms of volume, revenue and income. But expenses were also climbing, and the industry was facing a new round of wage negotiations and a restructuring of the Railroad Retirement system in '73. And another major road, Erie Lackawanna, slipped into bankruptcy—while roads that preceded it in filing under Section 77 seemed to be showing only slow progress toward successful reorganization.

—A new railroad came into being, as Illinois Central and Gulf, Mobile & Ohio became Illinois Central Gulf. A new company came into being, as Chicago & North Western employees bought the railroad from Northwest Industries. But, the year didn't see much action in the long-running Rock Island merger/control case, except for issuance of a second volume of an ICC examiner's report.

—Rail management and rail labor organizations went quite a way toward improving relationships. Continuing management/labor discussions at various levels seemed to be producing positive results, including labor's support for the industry's major legislative goals. The fireman-manning dispute was settled, and real progress was made in implementing work-rules changes agreed to by the operating brotherhoods. But, studies of the Railroad Retirement system thrust a new set of problems on the industry and the organizations and they were unresolved at yearend.

—Railroads won selective rate increases, though not in the amounts requested. They also became deeply involved with environmentalists' challenges to increases on so-called recyclable commodities. And, toward the end of '72, at least some roads were preparing for a new round of rate-increase proposals—but, while western and southern roads seemed agreed on a surcharge plan, eastern roads were refusing to go along.

—The old year was a good year for new services and improved rail-service quality. Minibridge came into being, unit-train operations were expanded and so were runthrough and interdivisional operations. Predicted major car shortages just didn't happen, though traffic was up and the number of freight cars in the fleet was down. Installations of new freight cars were down, but railroads put more new locomotive units in service than in any year since '53.

—Rail commuter traffic was up again. Amtrak's intercity business continued to lose money, but Amtrak did get a financial boost from Congress and it made its first moves into the equipment market with orders for locomotives that will be operated over Santa Fe and for turbotrains which will go into Chicago-Milwaukee and Chicago-St. Louis service in 1973.

—Major industry projects got under way, in the areas of track/train dynamics and freight-car information systems. FRA refined its track standards and issued its initial equipment standards. And the first phase of an AAR/RPI tank-car test and research project was completed.

—Both DOT and the AAR underwent reorganization. President Nixon chose a new Secretary of Transportation and put former White House staffers in two other key DOT jobs. The AAR restructured its board of directors to provide for a 21-member board (plus the AAR president, ex-officio), made up of representatives of the 15 roads paying the largest AAR assessments and six members to be elected (three each) by two sub-groups of roads.

—Railroads made more progress than in any recent year, and maybe more than in any year ever, in getting attention for their legislative proposals. ASTRO begat the Surface Transportation Act, and for once a piece of comprehensive transportation legislation had broad support from motor and water carriers and from labor. STA died with the 92nd Congress, but a powerful record was established for the 93rd Congress to consider.

So, that was 1972. Give it the C+ or the B- —and file '72 away as a better year than several of its immediate predecessors.

Financial results

A generally improved economy, the absence of work stoppages in major industries and the recent series of freight-rate increases all contributed to an improved financial showing for the railroads in 1972. Final figures for the full year were expected to show total operating revenues at an all-time high of approximately $13.5 billion. Operating expenses also climbed to record levels during the year with increased wages and material prices both contributing to the jump in expenses. Total payroll, which stood at slightly more than $6 billion in 1971, went up sharply to about $6.4 billion. On a basis of 1967=100, the industry's wage index topped 151 last year and the over-all wage-rates-and-prices index was at 143-plus.

Despite these inflationary pressures, however, net railway operating income and rate-of-return for the full year were both expected to be the highest since 1966—though computations were expected to show rate-of-return still at a depressed 3% or less.

On the revenue side, increases came only on freight traffic, with passenger, mail and express revenues showing a decline. On the expense side, all major categories—including maintenance-of-way, maintenance-of-equipment and transportation—were up.

Capital expenditures for equipment and property improvements also showed an increase to an estimated $1.23 billion, ending a downturn in spending that covered 1970-71. Expenditures for rolling stock were actually down last year, but a sharp increase in fixed-plant spending more than made up for the slip in equipment spending.

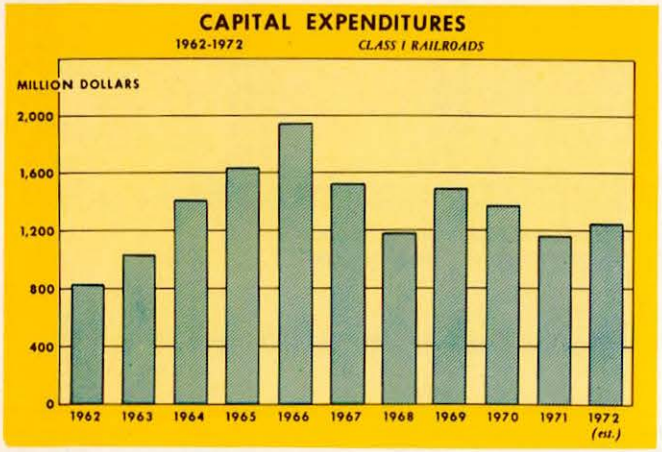
Other gauges of the industry's financial situation were somewhat mixed. Net working capital, which had been under severe pressures for several years, dropped into a deficit position. Debt maturities were down slightly. And average interest rates on equipment obligations, which peaked in 1970, declined for the second straight year, though the drop was not as great as in 1971.

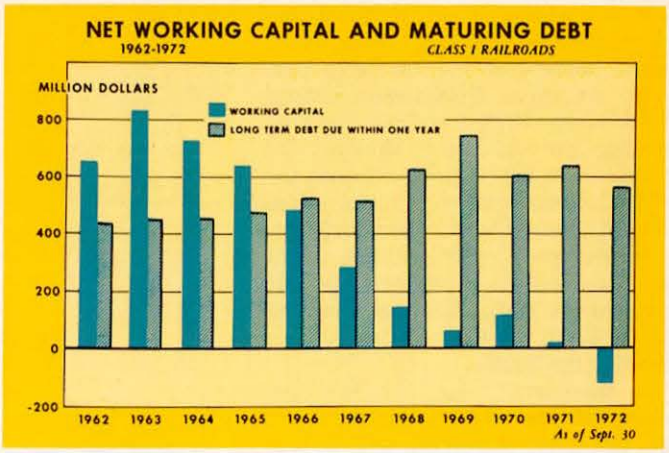
Through the year, the ICC kept open its investigation of the railroad rate base and rate-of-return. But the case was subject to a number of delays. Initial statements were to be filed Dec. 1, with reply statements due Feb. 1, 1973.

Traffic trends

Railroads in 1972 did more than ever before in moving the nation's commerce—an estimated 780 billion ton-miles of service performance, well above the old record-high of 767.8 billion set in 1969. Revenue carloadings were also up from 1971 levels but old trends

otherwise brightening picture





continued: Ton-miles increasing rather steadily over the years—reflecting, in part, higher-capacity equipment—while carloadings generally have been easing downward. Illustration: Between 1963 and 1972, ton-miles have gone up from 621 billion to 780 billion, while carloadings have slipped from 28.8 million to a shade more than 26 million.

In terms of specifics, TOFC/COFC traffic resumed the growth pattern established in the 1950s and '60s. Piggyback freight carloadings for '72 reached 1,327,000, ending a decline first noted in 1970 and adding up to the third-best piggyback year on record. The railroad share of new-automobile traffic also gained in '72 and remained above 50% of the total market. Grain traffic was stronger than usual and so was coal traffic—the grain movement reflecting both a good crop year and heavy late-year export movements, and the coal business reflecting both increased movement of low-sulphur coal from the West and a greater degree of labor peace in the coal-mining industry.

Service improvement

Improvement of the quality of rail service got perhaps more concentrated attention in 1972 than ever before. Among the many factors involved:

—New labor agreements with the operating brotherhoods were a help both in the establishment of interdivisional runs and in the improvement of operating efficiency in terminals.

—The number of inter-railroad runthrough operations increased sharply and so did individual railroads' interdivisional runs. The benefits were at least twofold: Cars on the runthroughs and interdivisional runs spent less time in transit; and intermediate terminals, bypassed by the through trains, were able to handle local and intermediate traffic more efficiently.

—Installations of locomotive units were the highest in any year since 1953, with about 1,450 new diesel-electrics going into service. With a net increase in the motive-power fleet and with the improved reliability of the newer units, power shortages became less of a problem and less traffic was delayed waiting for available power.

—Even though freight-car installations were down and freight traffic generally was up, car shortages did not develop except on a spot and short-term basis. Even late in the year, when grain was moving at a record pace, railroads continued to keep up with the demand for cars.

—Improvement in car supply was made up of many elements. One of the most important was the improvement which most roads have made over the past several years in computer systems designed to help operating managers manage. The AAR and the participating roads also continued to refine the TRAIN reporting network. And at midyear, the AAR board approved a systems design project which could lead to creation of an expanded computerized car-information system aimed at improving equipment utilization and thus minimizing car shortages.

—Railroad expenditures for fixed-plant improvements were up to a level unsurpassed in recent years except for one year, 1969. At the same time, the industry was beginning a multi-year track/train dynamics study which has as one of its goals the provision of better service through the kind of operations that will produce higher average train speeds, improved safety and less wear on both equipment and track. As planned, the long-term study will cover "all of the interacting forces that influence the motion of a train as a whole, its individual locomotives, cars and their contents and the track structure."

—A number of roads pushed ahead with line and track abandonment programs, pruning away facilities which available traffic could no longer support. The ICC, meanwhile, proposed simplified rules for handling abandonments, but a group of unions, one state and its public utilities commission brought suit in Federal court and the case was pending at yearend.

—Railroads continued to develop new services and new operations to serve new markets. There were substantial increases in the number of unit trains hauling low-sulphur coal from western mines to electric utilities. Perhaps the most spectacular service innovation, however, was minibridge, the unit-train movement of containers in conjunction with ocean carriers for traffic between the U.S. West Coast and Europe and between the U.S. East Coast and the Far East.

Significantly, the industry as a whole was able to show across-the-board improvement in indicators of car utilization. For example, statistics for the latest period available showed average car-miles per serviceable car per day up 4% from the same period in 1971, with net ton-miles per car-day up 2.8%. And, railroads continued to handle increased traffic with fewer cars. As for car shortages, first-half 1972 saw the railroads handling a record-high volume of traffic with 1.1% fewer serviceable cars than in first-half 1971.

Freight rates

On the rail freight-rate front, a year that began with a certain uncertainty ended the same way.

In the beginning, there was uncer-

tainty regarding a requested 2.5% rate surcharge. Finally, the ICC gave its approval and the surcharge became effective early in February. In the end, there was uncertainty regarding the industry's own action on a proposed 2% surcharge. Western and southern railroads had agreed on the proposal, but eastern roads refused to go along and it seemed likely that the surcharge plan would not get a Commission hearing before early 1973. And in between surcharge proposals, the railroads did get a selective rate increase through the ICC in October, with certain exceptions and holddowns: The 2.5% surcharge was to be dropped, interterritorial traffic would be held to a 6% increase, and intraterritorial traffic increases would be held to 6% in the East, 5% in the West and 4% in the South.

At the same time, the ICC was looking into the railroad industry's rate base and rate of return, and it kept hearing that the industry should be given opportunity to shoot for a return in the neighborhood of 10%. For its part, the Commission said only that in considering the selective-rate case it figured a 15.8% rate increase would be needed to provide a 6% over-all rate of return—and that this would be inadequate to yield 6% in the East while it brought home better than 6% in the West and South.

As the year passed, railroads made substantial progress in updating tariffs to reflect current levels of rates and charges. They also got involved with the Federal Price Commission under Phase 2 economic controls and with environmentalists on the issue of raising rates on recyclable commodities. And they were before the Commission with proposals on demurrage and on protective charges.

The Price Commission's role was presumably settled at midyear, with its approval of the ICC's own price-stabilization regulations. Until then, the Price Commission could disapprove any rate boost authorized by the ICC. But with the price board's OK (first to be granted to a Federal regulatory agency), the ICC got a final authority subject only to court challenge on a case-by-case basis.

Dealings with environmentalists were something else again. Railroads began the year by defending increases already granted in two rate cases. Then, the ICC, acting in a rule-making proceeding begun in May 1971, set up special rules calling for a statement on environmental impact or the absence thereof to be included with petitions filed. By mid-year, things got hotter, as a three-judge Federal court barred railroads from collecting the previously-approved 2.5% surcharge on commodities being transported for recycling—this in response to an action filed by a group called SCRAP (Students Challenging Regulatory

Rate of Return and Net Income—1962-1972

Year	Net railway operating income (millions)	Rate of return on investment after depreciation	Net income after fixed charges* (millions)
1962	$ 726	2.74 %	$ 571
1963	806	3.12	652
1964	818	3.16	698
1965	962	3.69	815
1966	1,046	3.90	904
1967	676	2.46	554
1968	678	2.44	569
1969	655	2.36	514
1970	486	1.73	227
1971	**696**	**2.47**	**347**
12 mos. to 9/30/72	**721**	**2.57**	**379**

* Ordinary income before extraordinary and prior period charges and credits.
Operations of the National Railroad Passenger Corporation (AMTRAK) are not included.

Note: Statistics shown above and elsewhere in the tables are for Class I line-haul railroads unless otherwise indicated

Condensed Income Account—1966, 1971 and 1972

	1966 (millions)	1971 (millions)	12 mos. to 9/30/72 (millions)
Total operating revenues	$10,655	$12,689	$13,024
Total operating expenses	8,118	10,055	10,340
Taxes	968	1,090	1,082
Rents (net debit)	523	848	881
Total expenses, rents and taxes, Excl. Fed. income taxes	9,422	11,886	12,227
Ratio to revenues	88.4%	93.7%	93.9%
Net railway operating income	$ 1,046	$ 696	$ 721
Net income (ordinary)	904	347	379

Operating Revenues—1966, 1971 and 1972

	1966 (millions)	1971 (millions)	12 mos. to 9/30/72 (millions)
Freight	$ 9,281	$11,786	$12,198
Passenger	544	294	258
Mail	304	123	100
Express	67	11	6
All other	459	475	461
Total	10,655	12,689	13,024

Operating Expenses—1966, 1971 and 1972

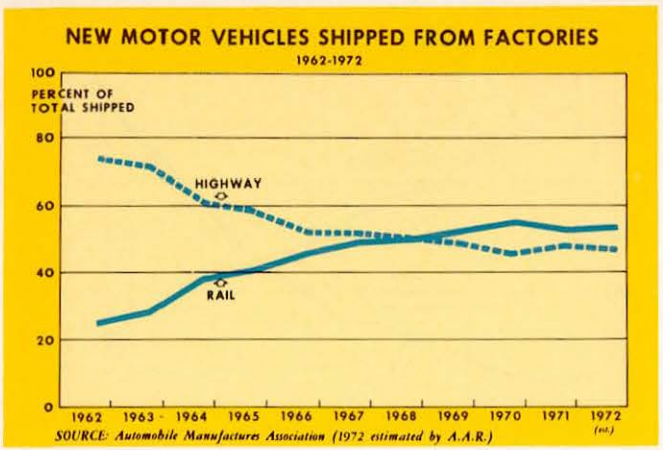
	1966 (millions)	1971 (millions)	12 mos. to 9/30/72 (millions)
Maintenance of way	$1,304	$ 1,813	$ 1,900
Maintenance of equipment	1,844	2,351	2,378
Transportation	4,139	4,890	5,045
Traffic, general and other	831	1,002	1,018
Total	8,118	10,055	10,340

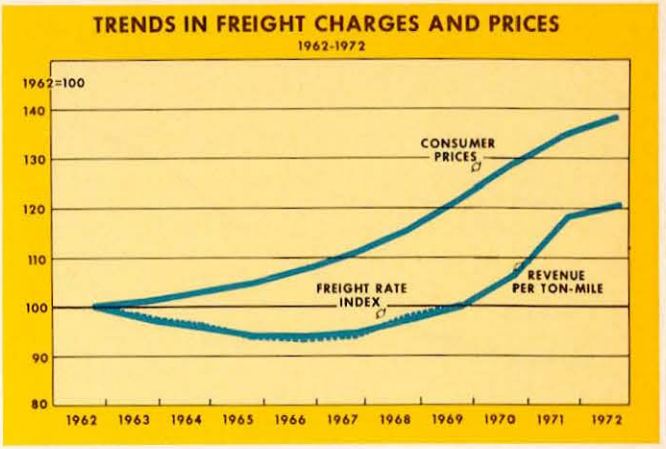
Freight and Passenger Traffic—1962-1972

Year	Revenue carloadings (thousands)	Piggyback carloadings (thousands)	Revenue ton-miles (millions)	Revenue passenger-miles (millions)
1962	28,722	706	592,862	19,902
1963	28,871	797	621,737	18,494
1964	29,027	891	658,639	18,245
1965	29,248	1,034	697,878	17,378
1966	29,623	1,163	738,395	17,085
1967	28,084	1,207	719,498	15,193
1968	28,253	1,337	744,023	13,110
1969	28,238	1,344	767,841	12,159
1970	27,160	1,257	764,809	10,740
1971	**25,263**	**1,199**	**739,743**	**8,933**
1972	**26,061**	**1,331**	**e 781,000**	**8,730**

e—Estimated.
Note: Piggyback carloadings shown above do not include mail and express, of which 117,126 piggyback carloadings were handled in 1972.
Revenue passenger-miles for 1971 and 1972 include National Railroad Passenger Corporation (AMTRAK).

The SCRAP affair: "It was hard to understand, let alone justify"





Agency Procedures). The court acted despite the fact that the ICC, when it approved the surcharge, found that it would have no significant adverse effect on the quality of the human environment within the meaning of the Environmental Protection Act of 1969. Then in October, at about the time that the ICC approved the railroads' proposed selective rate increases, the industry asked the Supreme Court for guidelines covering recyclable commodities and the environment. In the petition, the railroads questioned whether the lower court had jurisdiction to order the surcharge suspension "without making any findings to show that environmental injury would otherwise occur and without considering the adverse environmental impact of granting the injunction." The railroad plea also called the court's attention to the fact that "the environment may be as readily injured by impaired railroad service and diversion of traffic to trucks as by any impediment to use of recyclable materials." The next move came quickly, as the chairman of the Council on Environmental Quality told the ICC that its environmental analyses in recent rate-increase cases "appear to offer an inadequate basis from which to draw conclusions concerning the impact of freight rates on recycling and environmental quality." The ICC acted just as quickly: It suspended previously-approved selective increases on recyclable commodities at least until June 1973—saying that suspension came at the request of several parties, including CEQ, SCRAP and the Environmental Protection Agency. Railroad people found the whole affair hard to understand, let alone justify.

On demurrage charges, the year ran something like this: Early on, the ICC ordered refunds (with interest) of certain charges collected in 1971 and later cancelled. Those charges involved car detention on weekends and holidays: other increased charges were allowed to stand. Then, in October, both the ICC and FRA had something to say. The Commission filed a notice of proposed rule-making with the suggestion that demurrage charges in excess of $10 per car per day be paid to the owner-line in cases where a car is detained under demurrage on a non-owner railroad. With the demurrage scale adopted in 1971, the Commission said, the first-inerement $10 would compensate the railroad where a car is detained for its expense—and payment to an owner by a non-owner for all charges over $10 "will create an added incentive for the railroad car owner to acquire additional cars and it will remove any inducement on the part of the non-owner railroad to encourage detention of foreign cars in order to benefit from collection of demurrage charges." At about the same time, FRA received a contracted-for study on demurrage which recommended a revised system. Among other things, the study keyed free loading/unloading time to frequency of switching service and to consistency of service.

On protective-service charges, railroads asked for emergency interim relief designed to increase revenues by about $8 million a year—while pointing out that it had been 16 years since such charges had been increased, except for the 2.5% rate surcharge approved earlier in 1972. The railroads wanted increases of 25% on fresh perishables and 15% on frozen commodities. What they got was nothing: The ICC found the plea "fatally defective inasmuch as there is not cost evidence that would substantiate such a proposal."

Finally, at least one bright spot in the '72 rate picture: Railroads got the OK that led to establishment of what has been a fast-growing minibridge container service for import/export freight.

Passenger service

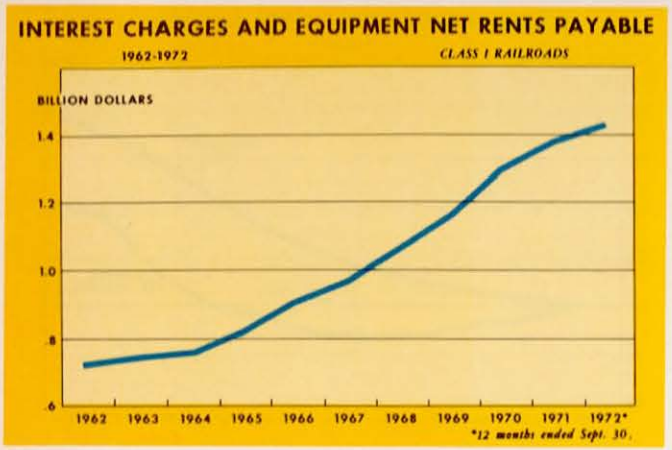
If you concede, even for now, that rail passenger service just naturally loses money, then Amtrak gets a reasonably good mark for its 1972 performance. During its first 12 months of operation, Amtrak showed a net loss of $147.7 million, including actual losses on train operations of about $133 million. The loss in its first fiscal year was $153.5 million. At the same time, Amtrak got a midyear transfusion from Congress in the form of legislation authorizing $225 million in Federal grants, loan guarantees of up to $150 million through June 30, 1973, and up to $200 million thereafter, and $2 million a year to help establish and improve service linking the U.S. with Canada and Mexico. Interestingly, Amtrak had asked for $170 million. The $225-million bill was worked out in conference after the House approved $170 million and the Senate voted $270 million.

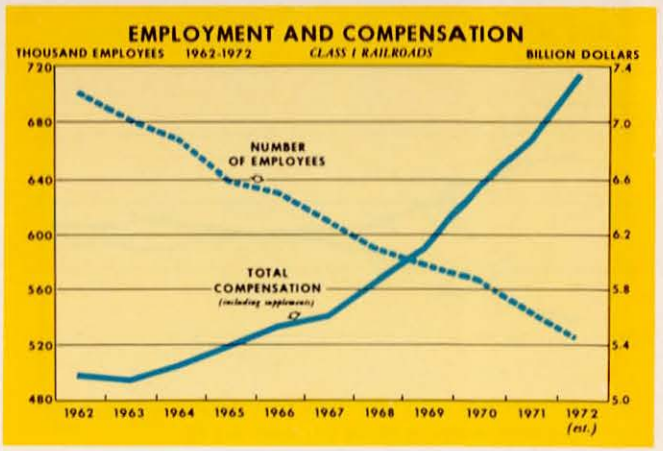
Among Amtrak's accomplishments during the year:

—First orders were placed for new equipment, new diesel-electric units and four turbotrains. Amtrak first ordered 40 3,000-hp units from EMD at a cost of $18 million. Then, shortly before yearend, Amtrak announced plans to place four turbotrains in service in the Chicago-Milwaukee and Chicago-St. Louis corridors. From ANF-Frangeco of France, the corporation will lease two five-car trains (with options to buy these trains and eight others). From Canada, Amtrak will get two four-car trains built by United Aircraft and originally used by Canadian National.

—Rail passenger service was resumed between the U.S. and Canada over two routes, Seattle-Vancouver and Washington-Montreal.

—Amtrak passenger cars, purchased from the railroads, were being refurbished in a number of shops. The first fully-renovated train was the "Broadway Limited" between Chicago and New York. Next up were trains operating Chicago-Los Angeles, Chicago-San Francisco, Seattle-Los Angeles, New York-Miami and New York-Boston. Am-





trak also increased service in the Washington-New York-Boston corridor.

—Things seemed to be looking up, in terms of revenues. For the third quarter of '72, Amtrak reported an increase of more than 13%, with all but three of 14 participating railroads in on the upside.

Elsewhere, Auto-Train—the private-enterprise venture that lets the passenger take his automobile with him—reported a good first year of operation between Lorton, Va., near Washington, and Sanford, Fla., near Disney World. During the year, Auto-Train acquired additional equipment—passenger cars, locomotives and auto carriers—and it planned to add two more trains, one in each direction, to its first route.

Finally, while DOT was doing R&D work on high-speed ground transportation operations at its Pueblo, Colo., test site, some members of Congress were getting ready with plans for routes for high-speed operations. Two senators said they would introduce a proposal for development of a high-speed rail route in the East Coast corridor—a route that would have 150-mph-average trains by 1976 and 400-mph trains 10 years after that. The cost: An estimated $5.5 billion.

As for rail commuter traffic, it showed another increase in 1972 in terms of passenger-miles, and the AAR figures indicated that this was the seventh straight year of increase. Railroads operating this service on a private-enterprise basis, however, continued to show losses. And in the Chicago area, where almost all of the private-enterprise is concentrated, proposals for operation of mass-transportation services by some kind of metropolitan agency were being pushed harder than ever.

Management/labor

By comparison with years past, 1972 was a quiet one in rail management/labor relations—quiet but extremely significant in terms of a new era in management/labor relations which seemed to be taking shape. Among the highlights of '72:

—Final agreements covering the period Jan. 1, 1970, to June 30, 1973, were signed by the carriers and three unions, the United Transportation Union, the Firemen & Oilers and the Sheet Metal Workers. Essentially, these agreements followed the wage pattern established earlier, 42% over 42 months. In the case of UTU (which actually reached agreement in 1971 but held off signing until terms were passed on by the Federal Pay Board), substantial revisions of work rules were won by the railroads. In the case of the Sheet Metal Workers, agreement came only after an emergency board hearing and report and it was not until May and June that the union signed the pact and had it ratified by the membership.

—State full-crew laws were all but wiped off the books in the few states that still had them as of Jan. 1, 1972. Indiana was the first to act, with an amendment providing that collective-bargaining agreements would take precedence over requirements in the existing law. Then, Ohio and Wisconsin acted, both through legislative repeal. Finally, voters in Arkansas went overwhelmingly for repeal at the November election. In all cases, generous employment-security guarantees were provided for persons employed at the time of repeal.

—The railroad industry's candidate for longest-running labor dispute, the fireman-manning case, was finally settled. This was the case that actually began with the Diesel Agreement of 1937 which required employment of firemen on diesel-electric locomotives. Railroads began their in-earnest fireman-off campaign in 1959 and secured some relief through Federally-imposed arbitration. But it was not until last July that the railroads and the UTU finally disposed of the issue through two agreements, one covering employment of firemen and the other dealing with engine-training programs. National Railway Labor Conference Chairman William H. Dempsey called the settlement "another step forward in the industry's efforts to modernize operations and apply the rule of reason to work practices." UTU President Al H. Chesser (who took office the same time Dempsey did, Jan. 1, 1972) said the agreements "proved once again that good-faith collective bargaining has no equal when it comes to reaching agreements in labor/management disputes." Among the major provisions of the agreements: (1) Railroads will continue to employ the 18,000 firemen working as of execution of the agreements, but positions may be eliminated through attrition and as firemen are promoted; (2) railroads will employ enough firemen to meet the need for new engineers, to fill passenger-service assignments and to comply with past agreements covering hostler and hostler-helper assignments; (3) firemen must retire at 65; (4) two special panels will study work rules and resolve disputes and make a continuing investigation of the results of the agreement; and (5) future engineers will be drawn from the ranks of firemen, with individual carriers setting up necessary training-for-promotion programs.

—With the nation under a program of economic controls, rail-industry wage increases came under review by the Pay Board. Despite the fact that negotiated increases—under the pattern established before controls were in effect—exceeded the 5.5% Pay Board guideline average, increases were and will be allowed to be paid for the life of current contracts. In the case of agreements with the operating crafts, the carriers did get work-rules changes offering opportunity for productivity improvement.

—All in all, 1972 was a relatively strike-free year. But, non-ops shut down the Long Island late in the year, and

Employees and Their Compensation—1962-1972

Year	Average number of employees	Total payroll (thousands)	Average annual earnings per employee	Average straight-time Hourly rate	Average straight-time Hourly earnings
1962	700,146	$4,662,065	$6,659	$2.75	$2.95
1963	680,039	4,629,566	6,808	2.78	2.99
1964	665,034	4,697,884	7,064	2.85	3.06
1965	639,961	4,793,066	7,490	3.00	3.22
1966	630,895	4,879,273	7,734	3.10	3.33
1967	610,191	4,933,663	8,085	3.30	3.56
1968	590,536	5,110,636	8,654	3.47	3.74
1969	578,277	5,362,754	9,274	3.70	4.00
1970	566,282	*5,711,280	*10,086	*4.05	*4.35
1971	**544,497**	***6,001,638**	***11,022**	***4.52**	***4.84**
1972(est)	**527,000**	**6,400,000**	**12,150**	**5.00**	**5.32**

* Adjusted to include retroactive increases.

Index of Wage Rates and Material Prices—1962-1972

(Average 1967=100)

Year	Wage index	Price Index Fuel	Price Index Other material	Price Index Total material	Index of wage rates and prices
1962	83.3	99.6	93.6	94.9	85.4
1963	84.2	99.1	93.4	94.6	86.1
1964	86.3	93.3	94.2	94.0	87.7
1965	90.9	95.6	94.9	95.0	91.6
1966	93.9	97.2	96.5	96.6	94.3
1967	100.0	100.0	100.0	100.0	100.0
1968	105.1	103.5	102.6	102.7	104.7
1969	112.2	106.7	105.5	105.8	110.9
1970	122.7*	110.5	109.4	109.7	120.2*
1971	**136.8***	**114.6**	**113.5**	**113.7**	**131.2***
1972 (Prel.)	**151.4**	**117.0**	**118.7**	**118.0**	**143.3**

*Reflects inclusion of retroactive wage increases.

Inventory of Equipment—1962-1972

December 31	Freight cars*	Passenger cars (incl. Pullman)	Head-end passenger-train cars	Diesel locomotive units	Other locomotive units
1962	1,852,992	14,240	11,788	28,170	505
1963	1,817,026	13,732	11,369	27,969	478
1964	1,802,582	12,507	11,154	27,879	433
1965	1,803,227	11,371	10,502	27,433	399
1966	1,834,963	10,665	9,932	27,516	378
1967	1,827,376	9,845	9,147	27,317	353
1968	1,804,712	8,736	6,746	27,045	331
1969	1,795,102	8,280	4,170	26,749	290
1970	1,783,603	7,854	3,065	26,754	271
1971	**1,763,444**	**6,761**	**1,909**	**26,893**	**253**
1972 (Est.)	**1,725,000a**	**5,600**	**1,400**	**27,000**	**250**

* All cars, railroad and private. a Revised series (based on TRAIN)

Note: Figures shown for passenger cars and for headend passenger-train cars for 1971 and 1972 include National Railroad Passenger Corp. (AMTRAK).

Capital Expenditures and Purchases—1962-1972

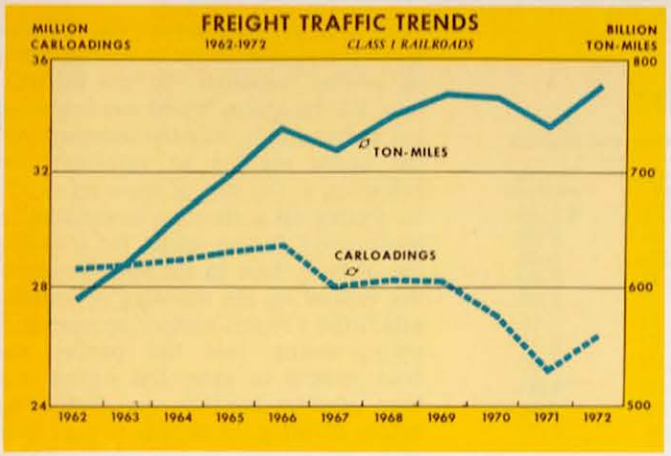
Year	Gross capital expenditures: Rolling stock (millions)	Gross capital expenditures: Other facilities (millions)	Gross capital expenditures: Total (millions)	Purchases of fuel, material and supplies (millions)
1962	$ 593	$240	$ 833	$1,311
1963	785	259	1,044	1,401
1964	1,140	278	1,417	1,476
1965	1,304	327	1,631	1,498
1966	1,554	399	1,953	1,605
1967	1,148	374	1,522	1,591
1968	819	368	1,187	1,534
1969	1,089	421	1,509	1,654
1970	993	358	1,351	n.a.
1971	**864**	**314**	**1,178**	**n.a.**
1972 (est.)	**825**	**405**	**1,230**	**n.a.**

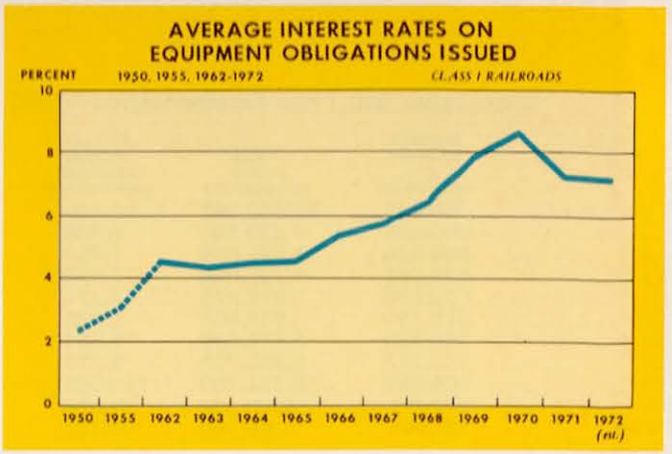
Note: Capital expenditures of Class I railroads do not include expenditures for railroad equipment made by private car companies and lessors. Purchases do not include materials applied by contractors or which otherwise bypass the material and supplies account.
n.a. Not available

Penn Central's crew-consist dispute with UTU threatened to hit a boiling point on several occasions. In the PC/UTU case, an emergency board was convened last spring and in July the company and the union reached an agreement on reduction in the size of some crews and on setting up a standing committee to recommend further steps for resolving the dispute. Late in the year, however, the neutral on the standing committee submitted a report without recommendations—noting that the parties had been unable to agree but urging that they consider carefully the alternatives before allowing the dispute to pass from their hands and "enter the political arena."

—Under terms of the current wage/rules agreements, new demands may be served Jan. 1, 1973, to become effective July 1. But these demands will have to be considered in a somewhat different-than-usual context, because a restructuring of the Railroad Retirement system is also in the works. Several '72 events had a bearing on the situation. In one, Congress approved a 20% increase in benefits on a "temporary" basis, to expire June 30, 1973 (as would 15% and 10% increases enacted in 1970 and '71). President Nixon vetoed the bill, noting that it had been passed without provision for financing and that he felt the Railroad Retirement fund "already is on shaky ground." But by overwhelming votes, both houses of Congress vetoed the veto. In the meantime, the Commission on Railroad Retirement recommended creation of a two-tier system and predicted that "unless corrective action is taken promptly. . .the system will go broke in about 16 years." Under this plan, Tier 1 would provide regular Social Security benefits and Tier 2 would represent a separate pension system based upon the differences between SS benefits and present Railroad Retirement levels. Tier 2 would be a float, changeable only by management/labor agreement or by legislation. As for financing of the two-tier plan, the Commission called for contributions from "the railroad community" to support Tier 2, through "immediate sizeable tax increases." Reactions were predictable. Management's member of the Commission, Burlington Northern Chairman Louis W. Menk, called attention to the financial problems of the industry and declared that "any restructuring of tax contributions is a matter to be directed to collective bargaining and, when there considered, must be an element of future wage/benefit negotiations." Labor's member, Brotherhood of Railway and Airline Clerks President C.L. Dennis, proposed that "management assume the full cost of the second-tier

There was little news in the merger area; but there was rather more





level of benefits." As matters stood at yearend, recommendations on keeping the fund solvent were to be submitted to Congress in early-1973.

—Legislation aimed at heading off strikes in transportation had its ups and downs. Early in the year, the Senate narrowly defeated one proposal which would have given the President permanent means of dealing with such problems. That was the so-called Packwood amendment, and it would have provided an arsenal-of-weapons approach not unlike that previously proposed by the President. A few weeks later, Sen. Packwood and 28 other senators reintroduced the plan as a separate bill, and there were indications of Administration support. Under this proposal, three options would be provided, with inclusion of rail and airline industries under Taft-Hartley: (1) Extension of the T-H 80-day cooling-off period by 30 days; (2) establishment of a special board to determine the feasibility of operating essential parts of an industry during a strike or lockout; and (3) selection by neutrals of settlement from the parties' final offers. In July, however, the Administration pulled back with the comments that the bill had little chance of passage in '72 and needed more study.

No review of management/labor affairs in railroading would be complete without some reference to the changing environment in which those affairs are being conducted. At the national level, chief executives of carriers and unions continued to meet regularly for discussion of mutual problems, and these discussions are looking more and more profitable for both sides. A reorganized NRLC also seems to be developing a much better rapport with union representatives. UTU, under Chesser, has come up with "Project '70's" which has as its aims not only the improvement of conditions for UTU members but importantly the improvement of UTU/railroad relations. One evidence of improvement: Rail labor has come around to support of the rail-backed Surface Transportation Act's provisions. On the local front, implementation of rules changes provided for in agreements with the operating crafts has been proceeding with much less difficulty than might have been anticipated. Chicago & North Western is continuing to benefit from special-situation agreements it has been able to work out (and the fact that hundreds of rank-and-file employees are now numbered among C&NW's owners should have some beneficial effect on what management and the organizations are able to do). Bankrupt Jersey Central worked out an accommodation on crew consist and other rules. And while the high hopes for Illinois Central's JOBS Commission remained just that at yearend, nobody was yet calling the much-heralded agreement a failure.

Merger activity

Last year will not go down in history as any kind of turning point in rail-industry consolidation. But there was enough activity to keep things interesting.

—Illinois Central and Gulf, Mobile & Ohio, which had received the ICC's OK to merge in late December 1971, finally made it in August, after an ICC-ordered postponement and a round of court cases.

—The complex, long-running Rock Island case rocked along through another year with not much new, except that the ICC examiner did issue Volume 2 of his report. Included in this second installment was a map outlining a proposed restructuring of western railroads that went well beyond the RI case itself. But, while the examiner said he thought the map would give interested and affected parties "an early opportunity to study in graphic form the final recommendations," little more was heard about it after the predictable immediate stir.

—Other activity on the merger front was mostly limited to Southern, which progressed its proposal for merger with Norfolk Southern and, late in 1972, came up with a plan for acquisition of the Tennessee Railroad.

—It was more like a divestiture than a merger, but certainly one of the most interesting and perhaps significant railroad restructurings of 1972 was the purchase of Chicago & North Western by C&NW employees from Northwest Industries, the conglomerate which had been built from a C&NW base.

The one major merger consummated in '72, Illinois Central Gulf, was something of a cliff-hanger. Scheduled to take effect Feb. 1, it was first hit with an indefinite delay by the ICC so that the Commission could consider petitions from Missouri Pacific, Kansas City Southern and C&NW. About a month later, the ICC reaffirmed its approval of ICG. MoPac and KCS then went to Federal court. But when a court upheld the merger and did not attach a stay-pending-appeal, IC and GM&O immediately put their merger into effect and created a new, 9,400-mile railroad with operations in 14 states in mid-America.

The Rock Island case might also be described as a cliff-hanger, except that hardly anybody could hang from a cliff that long. Original petitions were filed between 1963 and 1965, hearings ran from 1966 well into 1968. And the record now consists of almost 50,000 pages of testimony, exhibits adding up to about 100,000 pages, almost 5,500 pages of briefs and two volumes of the examiner's report.

In terms of new proposals, Southern and NS reached agreement early in 1972 on merger through an exchange of stock. Necessary approvals from directors and shareholders were received by midyear. Late in the year, however, Penn Central filed a protest to the proposal, which would involve merger of NS into Southern subsidiary Carolina

Prices, Freight Rates and Revenue Averages—1962-1972

Year	Consumer price index (1967 = 100)	ICC freight rate index (1950 = 100)	Revenue per ton-mile (cents)	Revenue per passenger-mile (cents)
1962	90.6	112	1.348	3.110
1963	91.7	109	1.310	3.179
1964	92.9	107	1.284	3.168
1965	94.5	105	1.266	3.182
1966	97.2	104	1.257	3.182
1967	100.0	105	1.269	3.195
1968	104.2	109p	1.310	3.389
1969	109.8	112e	1.347	3.608
1970	116.3	n.a.	1.428	3.914
1971	121.3	n.a.	1.593	4.258
1972	125.3 e	n.a.	1.620 e	4.600 e

p Preliminary. e Estimated. n.a. Not available.

Note: Revenue per passenger-mile figures for 1971 and 1972 include statistics of National Railroad Passenger Corporation (AMTRAK).

Carloadings by Commodities—1972 vs 1971

	1972	1971		Incr. or Decr. 1972 vs 1971 Cars	%
Grain	1,356,379	1,278,428	I	77,951	6.1
Other farm products	680,785	687,499	D	6,714	1.0
Metallic ores	1,710,815	1,721,583	D	10,768	0.6
Coal	4,558,138	4,503,174	I	54,964	1.2
Crushed stone, gravel and sand	1,355,272	1,356,625	D	1,353	0.1
Nonmetallic minerals	514,521	489,538	I	24,983	5.1
Grain mill products	962,951	956,311	I	6,640	0.7
Food and kindred products	1,245,955	1,261,711	D	15,756	1.2
Primary forest products	1,238,272	1,216,107	I	22,165	1.8
Lumber and wood products except furniture	880,038	798,997	I	81,041	10.1
Pulp, paper and allied products	1,183,555	1,158,830	I	24,725	2.1
Chemicals and allied products	1,395,990	1,356,973	I	39,017	2.9
Petroleum products	478,538	476,469	I	2,069	0.4
Stone, clay and glass products	1,054,957	975,856	I	79,101	8.1
Coke	385,398	363,382	I	22,016	6.1
Metals and products	1,235,998	1,208,027	I	27,971	2.3
Motor vehicles and equipment	1,230,730	1,169,473	I	61,257	5.2
Waste and scrap materials	765,865	714,841	I	51,024	7.1
Forwarder and shipper association traffic	326,279	304,876	I	21,403	7.0
All other carloads	3,474,882	3,238,660	I	236,222	7.3
LCL traffic	25,928	28,209	D	2,281	8.1
Total cars loaded	**26,061,246**	**25,265,569**	I	**795,677**	**3.1**

Railway Tax Accruals—1966, 1971 and 1972

	1966 (millions)	1971 (millions)	12 mos. to 9/30/72 (millions)
Payroll taxes	$439	$ 578	$ 603
Federal income taxes	186	108	76
All other taxes	343	404	403
Total	968	1,090	1,082

New Equipment Installed—1962-1972

Year	Freight-train cars	Passenger-train cars	Diesel-electric units	Other locomotives
1962	39,822	285	754	28
1963	48,255	143	806	13
1964	83,266	408	1,116	—
1965	89,653	577	1,440	—
1966	106,058	103	1,394	—
1967	100,181	138	1,067	—
1968	68,836	89	1,055	—
1969	75,972	292	1,263	—
1970	75,440	296	1,075	—
1971	**60,958**	**281**	**1,368**	—
1972 (est.)	**49,800**	**n.a.**	**1,450**	

Note: Units of equipment rebuilt are counted as new. Freight car installation includes cars of all railroads and private car lines. n.a. Not available.

& Northwestern. Southern's second consolidation proposal contemplates acquisition of the Tennessee Railroad (which has been in receivership) in exchange for Southern stock.

Yet another change in the Southeast isn't a merger but rather a consolidation of operations of Seaboard Coast Line and Louisville & Nashville (now 100% owned by SCL), along with Clinchfield and Georgia.

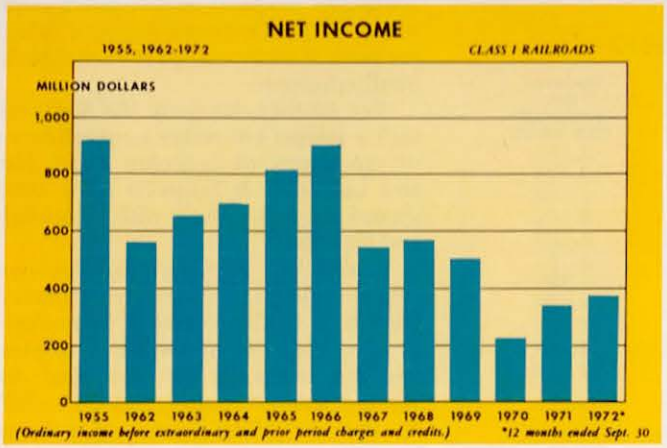
During the year, various other consolidation plans surfaced in conversation from time to time—most of them aimed at some kind of rationalization of plant and operations in the East. And one railroad chief executive, Maine Central's E. Spencer Miller, came up with an over-all proposal under which a national railroad corporation would be set up along the basic lines of AT&T.

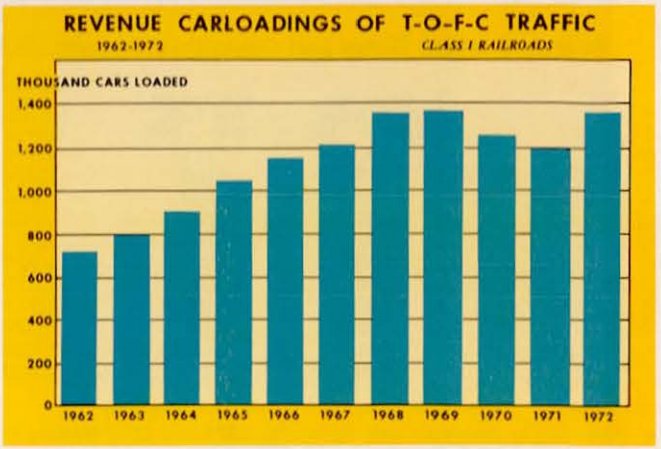
Railroad safety

The Federal Railroad Administration, the National Transportation Safety Board, the AAR and individual railroads all moved ahead in 1972 with proposals and action to improve railroad safety. Unfortunately, what may be most remembered was that '72 was the year in which 45 persons died when two Illinois Central Gulf commuter trains collided at a station south of Chicago's Loop.

For its part, FRA came out with modification and clarification of track standards originally set in 1971. FRA also released its first equipment standards, applying to all freight equipment except locomotives and except freight cars which do not operate over the general railroad system. Freight-car standards covered wheels, axles, journal bearings, other truck components, couplers and draft-gear systems, and set up schedules for periodic safety inspections. In a separate action, FRA also set up rule-making procedures covering rules prohibiting the use of certain freight cars and components deemed to be unsafe and specifying minimum standards for journal lubrication (with hearings on these proposals set for late January 1973). In the first rule-making proceeding, FRA indicated its proposed standards were based upon "the railroad industry's recommended standards and the FRA's independent evaluation of safety hazards on railroad freight cars." In this case, FRA set a Dec. 1, 1972, deadline for filing of comments, a Feb. 1, 1973, deadline for railroads to submit inspection programs and instructions and a Jan. 1, 1976, deadline after which railroads could not operate cars which had not been inspected in accordance with the proposed periodic inspection requirements. Generally, high-utilization cars would have to be inspected once

Bankruptcy dominated the news as L&HR and EL joined the reorganization ranks





during their first 150,000 miles and again every 50,000 miles until they are reconditioned (at which point the cycle would start over); less-utilized cars would have to be inspected once during their first 150,000 miles or seven years and again every 50,000 miles or two years until reconditioning.

NTSB was hardly idle. Early in the year, it recommended that FRA develop a comprehensive program "for future requirements in signal systems and operating rules"—a recommendation that echoed later in the year, when signal systems and operating rules came under question after the ICG commuter-train crash. In its early-'72 report, NTSB proposed a number of steps toward creation of a completely fail-safe operation; and, while it found that "collectively, railroad signal systems are well-engineered. . .the maximum practical level of safety in train operation that can be obtained with signals has not been reached." Later, the Board called for a review of industry procedures for testing of car components. It asked for a review of communications systems and for establishment of standards for communications. It asked for regulations governing use of radio in railroad operations. It proposed fencing of railroad right-of-way. It urged FRA to push for completion of an AAR/Railway Progress Institute tank-car safety and research project (a $1.25-million project which came to first-phase completion in November). Finally, NTSB asked FRA for an analysis of the causes of accidents attributed to employee negligence.

In the meantime, railroads were able to report substantial betterment in a number of categories of safety reporting—though freight traffic was at the same time headed toward record high levels. Train accidents were down. The number of accidents resulting in casualties was down. Deaths and injuries from all types of accidents were down, and that included grade-crossing accidents.

Worth noting, too, were a couple of other things. One is that progress is being made toward improving grade-crossing safety and toward reducing the sums railroads are assessed for safety improvements. During the year, railroads and the Federal government joined in a $2.55-million project for development of a grade-crossing data base to be used in planning, implementing and evaluating crossing-protection programs. A crossing-improvement provision in the Federal Highway Act of 1972 was lost when the whole Act was lost. But, an action by the Federal Highway Administration to reclassify various types of crossing improvements and reset railroad costs did bring some benefit: On Federally-financed projects, the railroad share of crossing elimination costs was cut from 10% to 5%, and the rail share of cost of installing protective devices was eliminated. Said FHWA: Installation of protective devices "was found to be of no ascertainable net benefit" to railroads.

A second factor was a recommendation from NTSB to DOT to the effect that the Federal government should "encourage the movement of freight via the safest mode of transport. . .where all other factors are equal so that the possibility for a choice of mode exists." NTSB proposed that DOT require Transportation Safety Impact Statements (similar to Environmental Impact Statements) in connection with DOT actions which might affect transport distribution. Diversion of traffic from highways to rails, the Board seemed to be saying, could result in substantial reduction in highway deaths and injuries.

Reorganization

No railroad story was more continuously in the news in 1972 than the story of troubled railroads trying to reorganize. Railroads in western and southern territory came through the year without adding to the rolls of the bankrupt—but railroads in the East again did not fare so well. Lehigh & Hudson River was the first to fall. And then, reeling from the damage inflicted by Tropical Storm Agnes, Erie Lackawanna went under. As the year went on, much was made of plans to try to work out some kind of coordinated salvation effort involving a number of the smaller eastern roads in reorganization. But most eyes remained firmly fixed on Penn Central—which kept on posting losses, though they were smaller ones. What PC's trustees have in mind will not be fully known until April 2, their deadline for submission of a reorganization plan to the reorganization court.

For railroads in trouble, the year went like this:

—Early on, Reading had its trustees approved by the ICC and Penn Central's trustees talked about what would be needed for successful reorganization. That depended, they said, on meeting five-year traffic/revenue forecasts and on three conditions not solely controllable by the railroad. The conditions: Rationalization of plant, with large-scale abandonments; elimination of $150 million a year in unnecessary labor costs; and full compensation for passenger-service losses.

—Rather quickly, PC got support for the reorganization plan from DOT and the Justice Department and a pledge that the ICC would do its part in, for instance, expediting decisions with a bearing on the situation. At about the same time, Jersey Central took further steps toward a planned shutdown of operations in Pennsylvania. Almost immediately, the Commission issued an emergency order authorizing Lehigh Valley, also in bankruptcy, to take over the CNJ Pennsylvania operations.

—Lehigh & Hudson River filed for bankruptcy, citing continuing operating

deficits and an insufficiency of cash to meet its obligations.

—Lehigh Valley got a permanent authorization from the ICC for takeover of Jersey Central's Pennsylvania operations.

—As promised when they had filed a first part of their reorganization plan, PC's trustees went to court with a detailed line-abandonment program covering almost 2,000 miles and 138 different segments of the railroad (39 of which, they said, no longer receive or originate traffic). Earlier, the trustees had asked the court to approve abandonment of 1,665 miles and had filed for 1,370 miles with the ICC.

—In June, Erie Lackawanna entered bankruptcy, thus becoming the sixth major eastern road on the bankruptcy list. Damage caused by "Agnes" was a major factor; so was the cost/price squeeze, with regulatory bodies not approving rate increases adequate to cover cost increases.

—About a month later, Lehigh Valley asked the court for permission to move toward merger with Reading and CNJ.

—In August, Penn Central reported its first-half results, and the improvement was modest. PC lost $124.8 million in the first six months, $3.1 million less than in 1971. At the same time, however, added costs due to storm and flood damage in June '72 were estimated at about $19 million. Later on PC's trustees were before the overseeing Federal court with a new report on line abandonment under which about 5,000 miles would be eliminated and PC would operate a 15,000-mile system. They also cited some progress toward meeting the conditions on which they had said a successful reorganization depended.

—Late in the year, government came through with a measure of aid for railroads hard-hit by "Agnes." The aid plan provided $48 million in loan guarantees available only to bankrupt roads, those who posted a net loss in 1970 or '71, or those whose storm damage exceeded net income for 1970 and '71.

—Also late in the year, there was a flurry of activity involving Jersey Central. The railroad itself filed for abandonment of all passenger service at the end of '72, but in the meantime the trustee for CNJ's mortgage was seeking a shutdown of the entire railroad. That petition was denied, as the judge cited indications—coming in part from work-rules changes agreed to by the operating unions—that the road's financial condition would improve. However, the judge also authorized CNJ to drop its passenger service late in January unless a new subsidy contract is worked out by CNJ and the state of New Jersey. And the final move of '72 was Jersey Central's own: A petition to the ICC covering consolidation of facilities in New Jersey under which CNJ would use certain facilities of and provide terminal services for Penn Central, Lehigh Valley, Reading and Pennsylvania-Reading Seashore Lines.

—As for Penn Central, its year ended on a mixed note. Generally, present PC management was getting high marks for service-quality improvement. But the road's crew-consist dispute with UTU remained unsettled and, at yearend, there was the possibility of a mid-January strike if PC began moving as it said it would under court authorization to phase out thousands of train-crew jobs. In another court action, PC got permission to postpone wage increases due Jan. 1, 1973. PC also lost one of its four trustees, as former Labor Secretary W. Willard Wirtz resigned. And, as 1973 began, the trustees filed a new report with the overseeing court—a report that was hardly optimistic. In it, PC cited delays which had been forced upon it in making abandonments, in cutting labor costs and in getting full compensation for passenger-service losses. As a result, PC indicated, the road's financial position was such that it was unable to make the physical improvements needed in order to get the increased traffic volume contemplated in earlier plans and forecasts. The blunt assessment: "Without government financial assistance for improvement of the railroad, a reorganization of the Penn Central cannot be achieved in 1976. . .Accumulating experience leads inescapably to the judgment that the Penn Central cannot, within an acceptable time, be made viable under the status quo."

Legislative activity

In Congress in 1972, so far as railroad-backed legislation was concerned, nothing happened—even though a lot happened. The legislative effort was tremendous, the record established was impressive, the actual accomplishment was close to zero.

AAR President Stephen Ailes, however, was far from discouraged: As he told Railway Age, "We are so far ahead of where we were. . .in terms of the ultimate possibilities of legislation that I think we have a lot to be thankful for. . .At the end of [the 92nd] Congress there was a bill before the House Commerce subcommittee which, with some modifications, had the support of the truckers, the water carriers, the Administration, shipper groups and railroad labor. . .and really little opposition." The basic bill, Ailes concluded, "has one tremendous amount of support and I think we've got a very good chance to get some legislation passed next year."

During the year, transportation proposals were given extensive hearings. Key provisions of the House bill to which Ailes referred called for $5 billion in Federal loan guarantees, more realistic regulatory procedures in rate-making, faster ICC handling of abandonment cases and the elimination of discrimination in taxation of property. Also lost in the 92nd Congress, when the 1972 Highway Act failed of passage, was $375 million over two fiscal years for use in elimination of rail/highway grade-crossing hazards.

Actually, the rail-related bill that probably got farthest was a freight-car bill which the Senate passed—but one which the industry opposed, at least in part because of restrictions which would have been placed on railroad dividend and investment decisions.

Many other bills affecting railroads were introduced in one house or the other or in both, and AAR appeared in support of or in opposition to a number of them. In retrospect, however, perhaps only three legislative actions—other than STA-related bills—will be remembered.

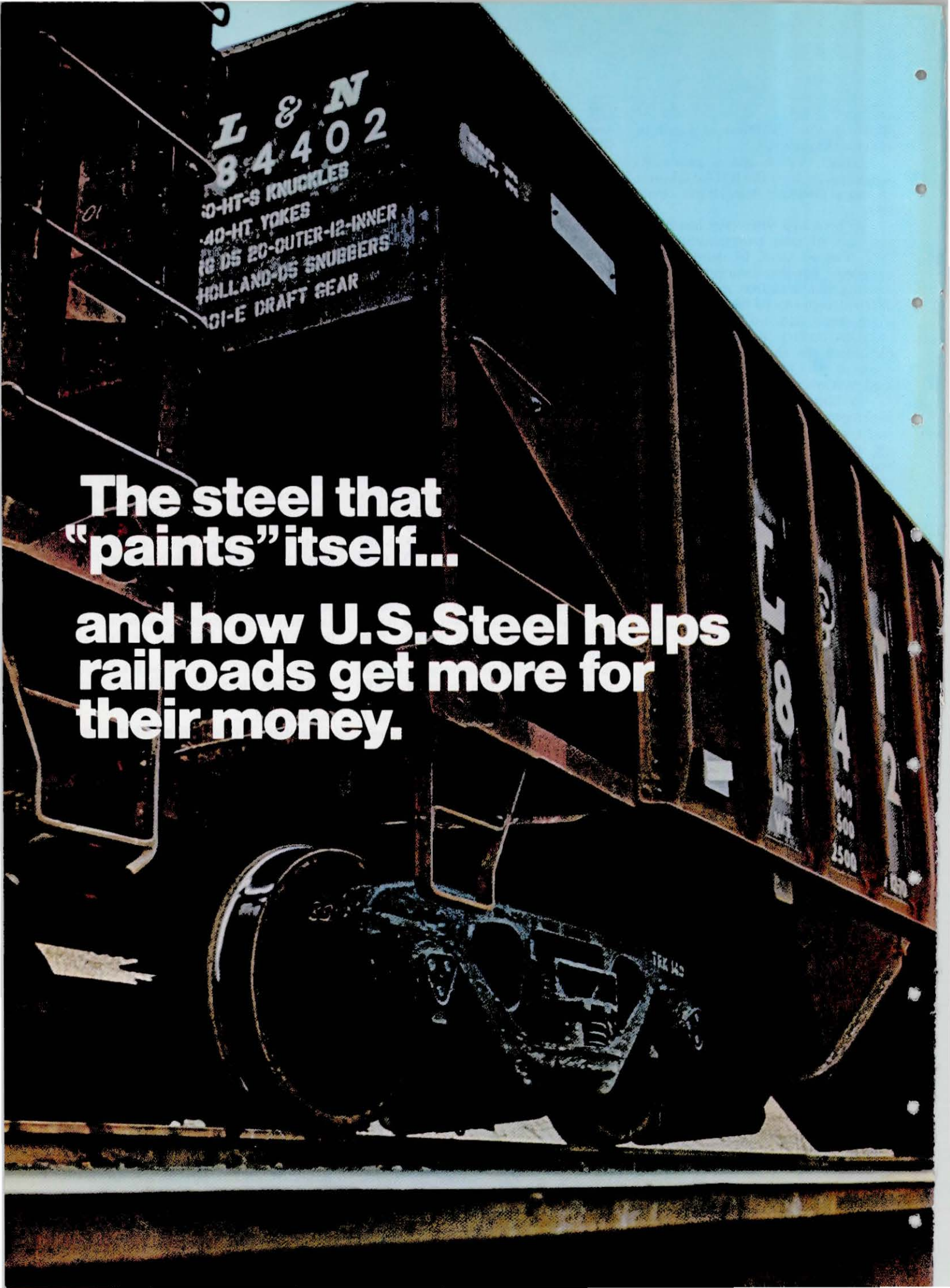
One involved aid to railroads hard-hit by Tropical Storm Agnes. The proposal involved $48 million in loan guarantees, and it passed.

Another involved new labor legislation. Nothing got through, but there was a record of sorts established on behalf of those who would legislate the machinery for preventing work stoppages in transportation.

The third had to do with Railroad Retirement. Congress boosted benefits for the third time on a "temporary" basis, the President vetoed the increase and Congress voted to override the veto. What this action did was to put even more pressure on rail management and labor to work out a restructuring of the Railroad Retirement system.

Congress also showed a lot of action on environmental legislation, some of it affecting railroads. For their part, railroads began making known a good record regarding the railroad role as an influence on the environment. But the effect of new legislation remained to be fully evaluated.

The Association of American Railroads commented at yearend: "Railroads take [environmental problems] seriously. They will continue to work on solutions. Railroads—which began with a head start, because of their very nature—don't intend to fall behind now." ■



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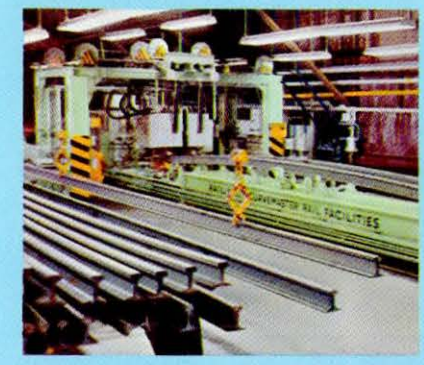

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Tower's bones left bare. Columns and beams of unpainted USS COR-TEN Steel support this 70-foot tower in the Santa Fe Railway yards, Kansas City, Kansas.

Subway opens door to embossed. The long-life doors of this new subway car, now in service, scored an industry "first": they're of our embossed steel.

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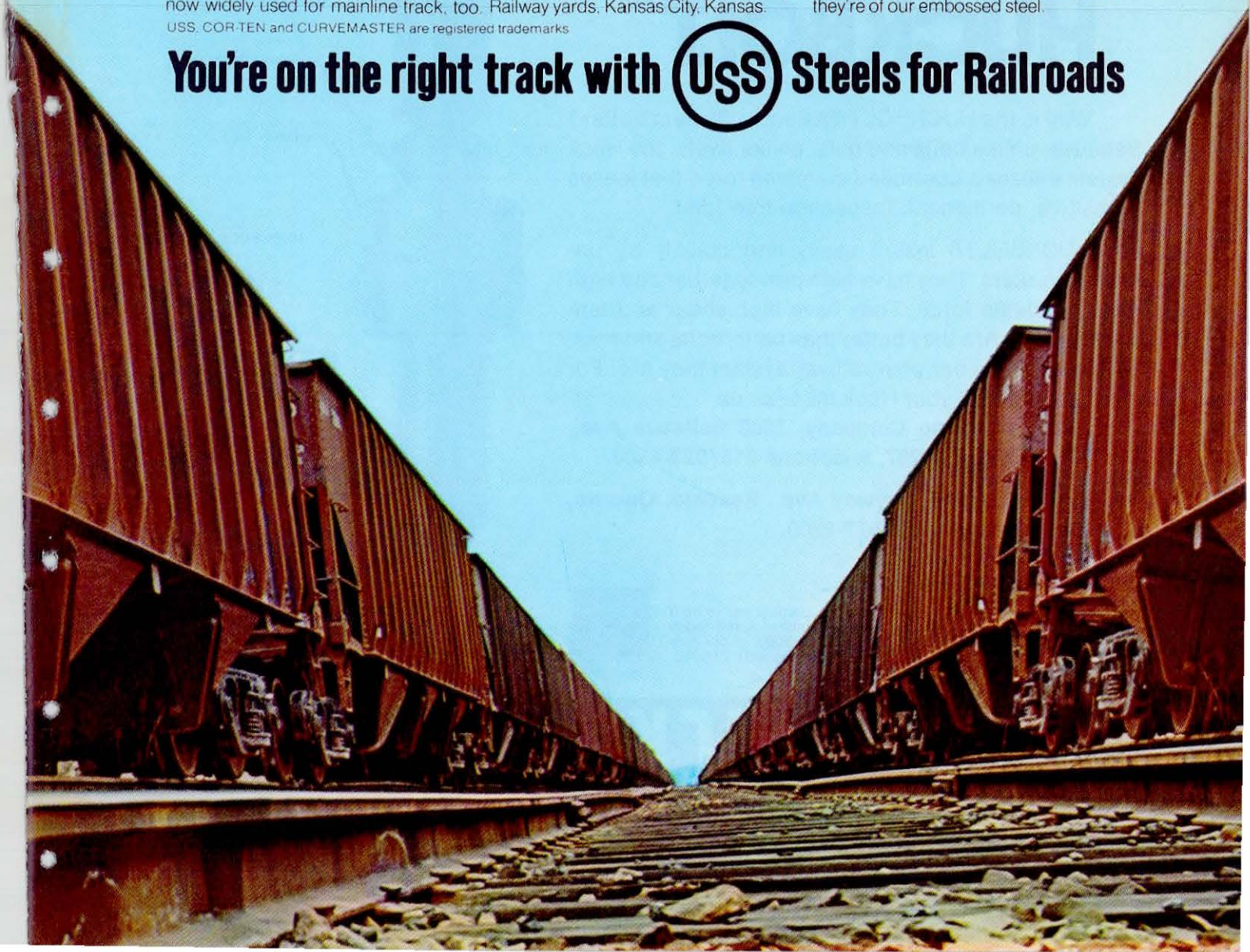
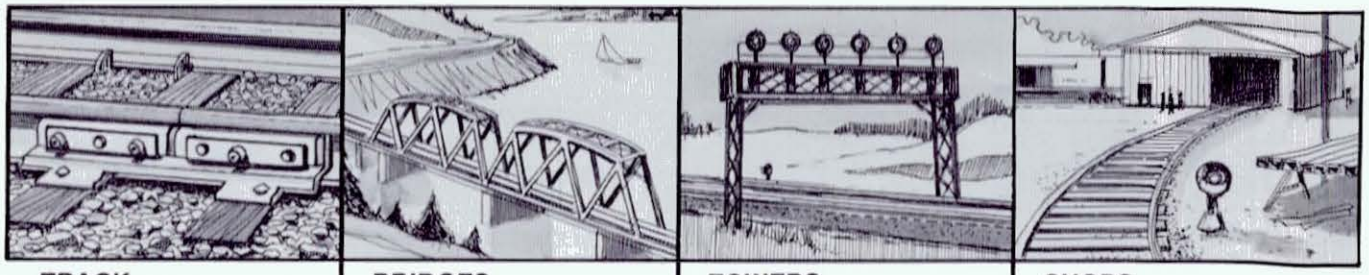


Once it was nails . . . then bolts and nuts . . . then rivets



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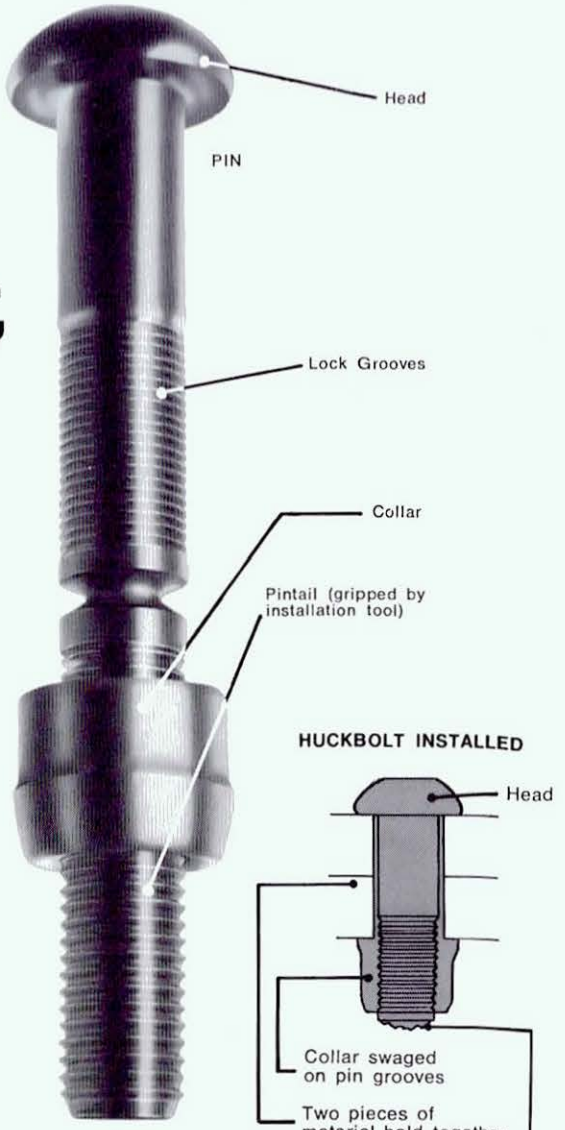

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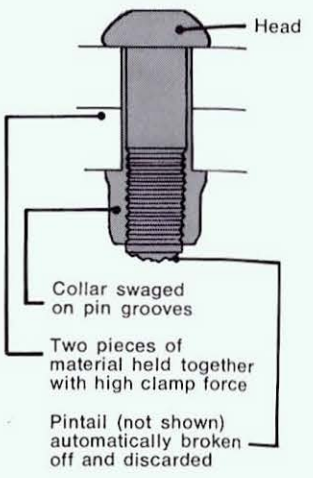
Head
Collar swaged on pin grooves
Two pieces of material held together with high clamp force
Pintail (not shown) automatically broken off and discarded

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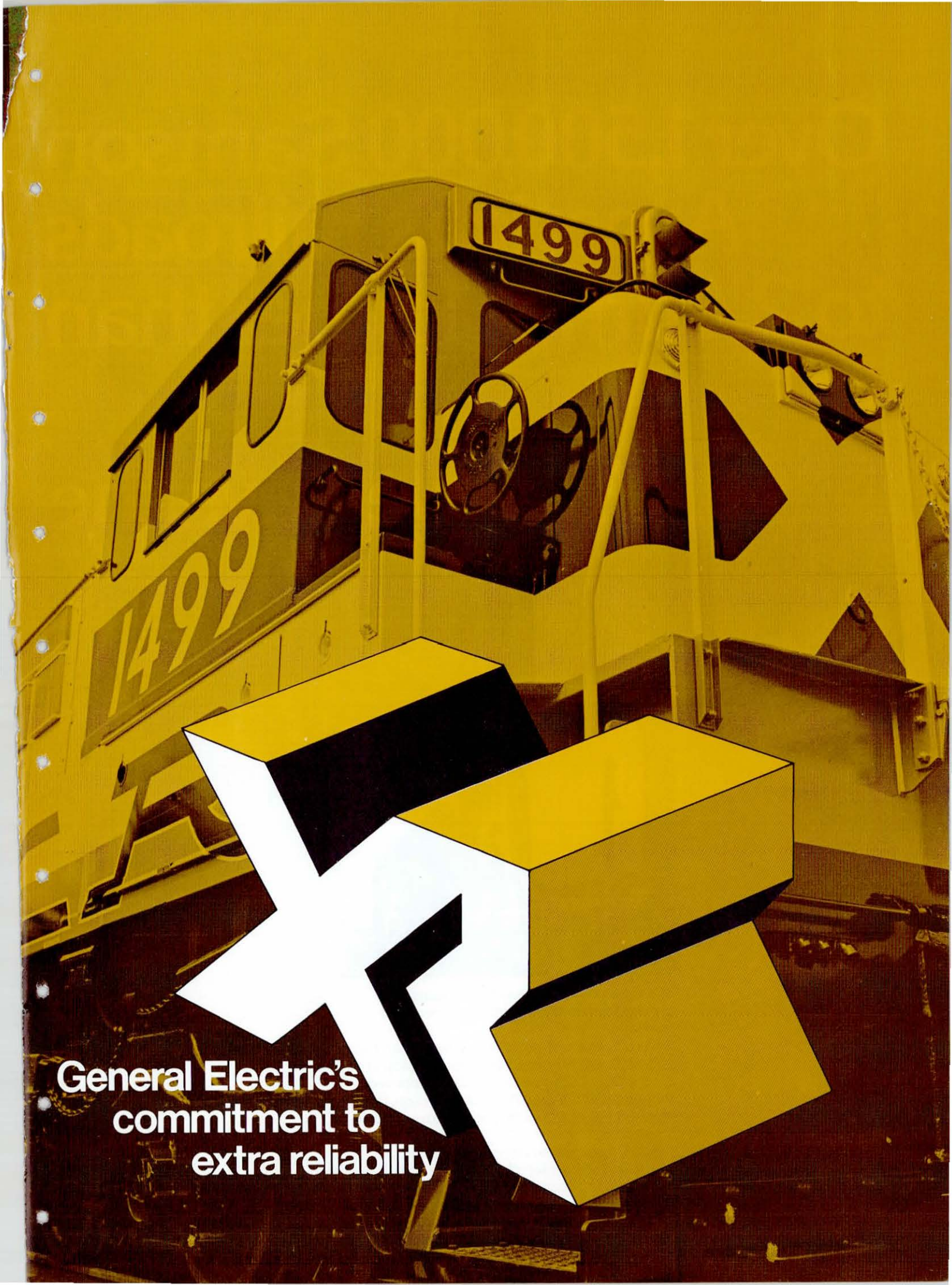

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The men who know report that Samson provides better train control and reduced sparking.

Locomotive engineers report better handling with Samson in terms of both shorter stops and substantial brake pipe reduction as opposed to standard metal shoes. And with Samson, the requirement of retainers running downgrade is minimized.

Also important to railroad men is the low-sparking Samson characteristic that minimizes the hazard of fires along the right of way. It's another major benefit that has led many leading roads to standardize on the Samson, and earned Samson AAR approval for interchange.

Isn't it time your road changed to Samson?

brake shoes are saving 24-54% by lasting up ordinary metal shoes.

figures to prove it.

We've been involved with the railroad industry too long to kid you about any product. Fortunately, we don't have to even think of stretching the facts when it comes to the Samson brake shoe.

Let's take a look at AAR Billing Job 1828 & 1830 for a comparison of application costs for ordinary cast iron brake shoes versus the cast iron-high phosphorous Samson.

Labor is the same: $1.19. Material cost is $2.51 for cast iron and $3.02 for the Samson. This makes the job total $3.70 for cast iron and $4.21 for Samson.

This additional 51¢ per shoe is an Applied Increased Cost of 14%.

Since handling and storage costs are the same for both types of shoe, everything saved by Samson above this 14% is therefore free and clear to your road. And those savings are very substantial since field tests have proved conclusively that Samson lasts up to 2 1/2 times longer than standard metal shoes.

Translate that longer life to savings, and you come up with dollar savings from 24-54% with Samson. Even though the Samson shoe itself costs 14% more applied than ordinary metal shoes.

Our arithmetic is easy to check. And the mechanical officers on many leading roads will support our claims. So let's get together and thoroughly discuss Samson shoes in relation to your own road. Set up a meeting with your Abex representative—a mighty good man to have working on your railroad.

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1972 REVIEW Car and locomotive orders

1972 FREIGHT-TRAIN CAR ORDERS

Purchaser	No.	Type	Capacity	Builder
Apalachicola Northern	50	Bulkhead Flat	140,000	Thrall
Atchison, Topeka & Santa Fe	1000	Cov. Hopper	200,000	P-S
	100	Hopper	200,000	Greenville
	100	Box	200,000	ACF
	100	High-cube Box	200,000	ACF
	31	Ins. Box	200,000	Pacific Car
	100	Ins. Box	200,000	Co. Shops
	9	Ore	200,000	Gunderson
Baltimore & Ohio	8	Vert-A-Pac	110,000	Whitehead & Kales*
	800	Gondola	200,000	Co. Shops
	34	Box	154,000	P-S
	77	Box	200,000	P-S
Bessemer & Lake Erie	16	Coil Steel Gondola	100,000	Darby
	23	Hopper	200,000	P-S
	50	Ingot	180,000	Greenville
Bethlehem Steel	25	Gondola	200,000	Bethlehem
Burlington Equipment	300	Hopper	200,000	Bethlehem
Burlington Northern	300	Hopper	200,000	Bethlehem
	3	Condition-aire Cov. Hopper	200,000	ACF
	150	XP Box	200,000	Gunderson
	500	XL Box	140,000	P-S
	35	Airslide Cov. Hopper	190,000	General American
	63	Bulkhead Flat	200,000	General American
	400	Hopper	200,000	Greenville
	105	Gondola	200,000	Thrall
	200	Bulkhead Flat	140,000	Thrall
	50	Caboose	.....	Pacific Car
	100	Bulkhead Flat	140,000	Thrall
Borg Warner Corp.	30	Hopper	.....	North American
Butler Mfg. Co.	100	Pressure Differential Cov. Hopper	.....	North American
	25	Hopper	.....	North American
Cambria & Indiana	20	Hopper	200,000	Bethlehem
Celtran, Inc.	57	Tank	.....	Marathon Tank Car
Central Vermont	15	Caboose	100,000	International
Chesapeake & Ohio	40	Box	140,000	P-S
	40	Box	200,000	P-S
	110	Coil Steel	200,000	Evans
Chicago & Illinois Midland	4	Caboose	100,000	International
Chicago & North Western	500	Cov. Hopper	200,000	ACF
Chicago, Rock Island & Pacific	8	Vert-A-Pac	.....	Whitehead & Kales
	500	Cov. Hopper	200,000	ACF
	300	Box	140,000	ACF
	100	Hopper	200,000	Ortner
	15	Box	140,000	Berwick
Cleveland Electric Illuminating Co.	50	Gondola	216,000	Greenville
Consolidation Coal	33	Gondola	200,000	Greenville
Corinth & Counce R.R.	5	Gondola	200,000	Ortner
Denver & Rio Grande Western	100	Box	140,000	Gunderson
	5	Airslide Cov. Hopper	200,000	General American
	60	Gondola	200,000	Thrall
	100	Cov. Hopper	200,000	ACF
	75	Ballast	200,000	Greenville
Department of U.S. Army	4	Caboose	100,000	International
	3	Depressed Ctr. Flat	280,000	Thrall
Detroit & Mackinac	100	Box	154,000	P-S
Detroit & Toledo Shore Line	4	Caboose	100,000	International
Detroit, Toledo & Ironton	30	Cov. Gondola	178,000	Greenville
	75	Box	160,000	Berwick
	36	Box	171,000	Greenville
	50	Cov. Hopper	200,000	P-S*
E.I. Dupont Co.	40	Tank	.....	Marathon Tank Car
Elgin, Joliet & Eastern	150	Gondola	200,000	Berwick
	100	Hopper	140,000	Greenville
	24	Cov. Hopper	250,000	ACF
Erie Lackawanna	50	Cov. Hopper	200,000	P-S*
Florida East Coast	1	Vert-A-Pac	140,000	Whitehead & Kales
	100	Hopper	200,000	Ortner
	18	Bi-levels	85,000	Whitehead & Kales
Frisco	400	Box	140,000	ACF
	200	Hopper	200,000	Greenville
	200	Cov. Hopper	200,000	P-S
	6	Airslide Cov. Hopper	200,000	General American
	100	Ins. Box	140,000	Pacific Car
Fruit Growers Express	200	RPL Box	200,000	Co. Shops
	310	RBL Box	140,000	Co. Shops
General American Transportation	20	Coal Cars	200,000	Darby
	3	Airslide Cov. Hopper	.....	North American
General Electric Co.	2	Flat	200,000	General Steel
Georgetown R.R.	200	Gondola	200,000	Ortner
Grand Trunk Western	43	Flat	140,000	Bethlehem
	39	Flat	140,000	Bethlehem
	100	Gondola	.....	Ortner
Illinois Central Gulf	50	Box	200,000	Co. Shops
	100	Hopper	200,000	Co. Shops
	300	Cov. Hopper	200,000	P-S
	200	Wood Chip	140,000	Co. Shops
	55	Ins. Box	140,000	U.S. Railway Equipment

*Leased

and signaling statistics

Purchaser	No.	Type	Capacity	Builder
	50	Cov. Hopper	200,000	ACF
	20	HiRoof Box	140,000	Berwick
	200	Gondola	200,000	Co. Shops
Illinois Terminal	50	Gondola	200,000	Thrall
	150	Box	140,000	ACF
Louisville & Nashville	350	Cov. Hopper	200,000	ACF
Kansas City Southern	45	Box	140,000	ACF
	300	Box	200,000	ACF
	5	Air Dump	200,000	Difco
Maine Central	250	Box	150,000	Berwick *
	1	Caboose	.....	International
Marathon Leasing Co.	31	Tank	.....	Marathon Tank Car
	150	Hopper	.....	Marathon Tank Car
Minneapolis, Northfield & Southern	3	Caboose	100,000	International
	4	Box	140,000	Gunderson
Missouri Pacific System**	5	Appliance Box	140,000	P-S
	300	Ballast	200,000	Bethlehem
	650	Hopper	200,000	Bethlehem
	200	Box	200,000	ACF
	350	Box	140,000	ACF
	50	High-Cube Box	140,000	ACF
	100	Ins. Box	140,000	Pacific Car
	400	Cov. Hopper	200,000	P-S
	30	Vert-A-Pac	.....	Whitehead & Kales
Morrison-Knudsen Co.	80	Air Dump Coal Cars	244,000	Gunderson
National Steel Car Corp.	100	Hopper	.....	North American
Nevada Northern	1	Caboose	100,000	International
Norfolk Southern	150	Box	154,000	Southern Iron & Equipment Co.
Norfolk & Western	65	Box	200,000	P-S
	75	Box	200,000	Berwick
	1000	Gondola	200,000	Co. Shops
North American Car Corp.	631	Hopper	.....	North American
	998	Tank	200,000	North American
	27	Tank	.....	Marathon Tank Car Co.
Peabody Coal Co.	2	Coal Cars	200,000	Darby
Penn Central	1500	Hopper	200,000	Bethlehem *
	500	Cov. Hopper	200,000	P-S
	100	PD Cov. Hopper	200,000	General American
	1000	Box	154,000	Fruehauf
	500	Box	154,000	P-S
	500	Box	154,000	U.S. Railway Equipment *
	250	Ins. Box	154,000	Fruit Growers Express
	272	Box	200,000	Berwick *
	130	Box	154,000	Berwick *
	21	Box	200,000	Greenville
Pennsylvania Power & Light	131	Hopper	200,000	Bethlehem
Pittsburgh & Lake Erie	500	Gondola	200,000	Greenville
PPG Industries, Inc.	31	Tank	.....	Marathon Tank Car Co. *
Procor Ltd.	50	Tank	.....	North American
Public Service of Colorado	140	Coal Cars	200,000	Darby
Pullman-Standard	1300	Hopper	200,000	North American
Pullman Transport Leasing	81	Tank	.....	Marathon Tank Car
Pullman-Transport Leasing Co.	103	Cov. Hopper	200,000	P-S
	200	Cov. Hopper	200,000	P-S
	550	Cov. Hopper	200,000	P-S
	230	Cov. Hopper	200,000	P-S
	470	Cov. Hopper	200,000	P-S
Reading	200	Box	140,000	P-S
	50	Box	140,000	Berwick *
Richmond, Fredericksburg & Potomac	100	Box	140,000	Fruit Growers Express
Sandy Hill Corp.	4	Flat (Well)	200,000	General Steel
Seaboard Coast Line	300	Box	154,000	P-S
	200	Box	154,000	P-S
	122	Box	110,000	Co. Shops
	8	Vert-A-Pac	.....	Whitehead & Kales
	1000	Gondola	154,000	Co. Shops
	130	Rotary Dump Gondola	200,000	Bethlehem
	200	Wood Chip Hopper	180,000	P-S
	500	Box	154,000	ACF
	250	Box	154,000	ACF
Shell Oil Company	34	Tank	.....	Marathon Tank Car
Soo Line	10	Flat	140,000	Bethlehem
	300	Cov. Hopper	200,000	ACF
	50	Hopper	200,000	Maxson
	100	Box	140,000	Co. Shops
	10	Caboose	.....	International
Southern	200	Flat	140,000	ACF
	75	Box	200,000	Berwick
	4	Air Dump	154,000	Difco
	100	Bulkhead Flat	200,000	Thrall
	12	Flat	140,000	P-S
	1500	Box	140,000	P-S
	125	Box	140,000	P-S
	300	Aggregate	200,000	Greenville
	125	Wood Chip Hopper	200,000	Greenville
	500	Pulpwood	140,000	Greenville
	50	Ballast	200,000	Greenville
	100	Bulkhead Flat	200,000	Greenville
	100	Bulkhead Flat	200,000	Greenville
	1	Flat	500,000	Maxson
Southern Pacific	2000	Cus. Box	140,000	Gunderson
	900	Cus. Box	140,000	Gunderson
	500	Ins. Cush. Box	140,000	Pacific Car

*Leased **Includes Missouri Pacific, Missouri-Illinois, Texas & Pacific and Chicago & Eastern Illinois

1972 FREIGHT-TRAIN CAR ORDERS

Purchaser	No.	Type	Capacity	Builder
Southern Pacific (cont.)	800	Ins. Cush. Box	140,000	Pacific Car
	100	Gondola	200,000	Thrall
	55	Caboose	.....	International
	125	Coil Steel Flat	200,000	Thrall
	59	Gondola	200,000	Gunderson
	100	Ins. Cush. Box	200,000	P-S
	22	Flat	140,000	P-S
	100	Cush. Box	200,000	ACF
	300	Cush. Box	200,000	Pacific Car
	1000	Cush. Box	140,000	Gunderson
	64	Flat	140,000	P-S
	500	Cov. Hopper	200,000	ACF
	70	Flat	140,000	P-S
Thrall Car Manufacturing Co.	250	All Door Box	140,000	North American
Trailer Train	359	Flat	140,000	ACF
	949	Flat	140,000	Bethlehem
	147	Flat	180,000	Bethlehem
	230	Flat	110,000	P-S
	875	Flat	140,000	P-S
Union Railroad	7	Caboose	.....	Co. Shops
Union Pacific	1400	Cov. Hopper	200,000	P-S
	300	Hopper	200,000	Bethlehem
	600	Ins. Box	140,000	Pacific Car
	200	Ins. Box	200,000	Pacific Car
	100	Wood Chip Gondola	200,000	Ortner
	100	Box	200,000	Gunderson
	100	Box	140,000	Gunderson
	875	Box	140,000	Co. Shops
	100	Box	140,000	Co. Shops
	8	Box	200,000	Greenville
	50	Flat	200,000	Co. Shops
	50	Bulkhead Flat	200,000	Thrall
U.S. Railway Leasing Co.	545	RBL	140,000	U.S. Railway Equipment
	550	Cov. Hopper	200,000	U.S. Railway Equipment
Various Industrials	1526	Cov. Hopper	200,000	ACF
	719	Tank	200,000	ACF
	6	Box	140,000	Maxson
	2	Flat	420,000	Maxson
	4	Flat	750,000	Maxson
	30	Hopper	200,000	Maxson
	10	Flat	140,000	Maxson
	30	Gondola	200,000	Maxson
	245	Rapid Discharge Hopper	200,000	Ortner
	175	Container	200,000	Thrall
	1	Coke Quench	140,000	Thrall
	221	Cov. Hopper	140,000	Thrall
	60	Gondola	100,000	Thrall
	380	Box	140,000	Thrall
	280	Gondola	200,000	Thrall
	20	Bulkhead Flat	140,000	Thrall
	60	Wood Chip	200,000	Thrall
	100	Box	140,000	Thrall
	1177	Tank	.....	Various
Western Pacific	36	Box	140,000	Pacific Car
	22	RBL Box	200,000	Pacific Car
	10	Box	140,000	U.S. Railway Equipment
	5	Flat	140,000	Maxson
	7	Box	200,000	Greenville
	10	Caboose	.....	International
	25	Cov. Hopper	200,000	ACF
Woodward Iron Co.	6	Air Dump	154,000	Difco

1972 LOCOMOTIVE ORDERS

Purchaser	No.	Type	Horsepower	Builder
Amtrak	40	C-C	3,000	EMD
Angelina & Neches River	1	B-B	1,500	EMD
Armco Steel	2	B-B	1,500	EMD
Atchison, Topeka & Santa Fe	43	C-C	3,600	EMD
	21	C-C	3,600	GE
Auto Train Corp.	5	B-B	3,600	GE
Baltimore & Ohio	65	B-B	3,000	EMD
Belt of Chicago	6	B-B	2,000	EMD
Bessemer & Lake Erie	9	C-C	2,000	EMD
Birmingham Southern	2	B-B	1,000	EMD
Burlington Northern	10	B-B	2,000	EMD
	15	B-B	1,500	EMD
	30	C-C	3,000	GE
	36	C-C	3,000	EMD
Central Foundry	1	B-B	1,000	EMD
Chevrolet Div.	1	B-B	1,000	EMD
Chesapeake & Ohio	20	B-B	3,000	EMD
	15	B-B	3,000	GE
Chicago, Milwaukee, St. Paul & Pacific	41	C-C	3,000	EMD
	5	C-C	2,300	EMD
Clinchfield	10	C-C	3,600	EMD
Colorado & Southern	18	C-C	3,000	EMD
Denver & Rio Grande Western	10	B-B	3,000	EMD
Detroit Edison	5	C-C	3,000	EMD
Detroit, Toledo & Ironton	8	B-B	3,000	EMD
Durham & Southern	4	B-B	2,000	EMD
Elgin, Joliet & Eastern	4	B-B	2,000	EMD
Erie Lackawanna	13	C-C	3,600	EMD
	13	C-C	3,600	GE
Florida East Coast	5	B-B	3,000	EMD
Frisco	17	B-B	2,000	EMD
	8	B-B	1,500	EMD
Georgia R.R.	2	B-B	2,000	EMD
Indianapolis Union	3	B-B	1,500	EMD
Kansas City Southern	20	C-C	3,000	EMD
Lehigh Valley	12	B-B	2,000	EMD
Louisville & Nashville	50	B-B	2,000	EMD
	30	C-C	3,000	GE
	10	B-B	1,500	EMD
	25	B-B	2,000	EMD
	20	B-B	2,300	GE
Minnesota Taconite	6	B-B	1,500	EMD
Missouri-Kansas-Texas	10	B-B	2,000	EMD
	2	B-B	2,250	GE
Missouri Pacific System*	57	B-B	2,000	EMD
	7	C-C	3,000	GE
Newburgh & South Shore	1	B-B	1,000	EMD
Penn Central	100	B-B	2,000	EMD
	50	B-B	2,250	GE
	114	B-B	2,000	EMD
Pittsburgh & Lake Erie	10	B-B	1,500	EMD
Providence & Worcester	2	B-B	2,000	MLW
Richmond, Fredericksburg & Potomac	7	B-B	3,000	EMD
Seaboard Coast Line	15	B-B	Mates	GE
	25	...	1,800	GE
	25	...	2,000	EMD
Soo Line	5	C-C	3,000	EMD
Southern	10	B-B	2,000	EMD
	4	B-B	2,000	EMD
	8	C-C	3,000	EMD
	45	B-B	2,000	EMD
Southern Pacific	40	...	3,300	GE
	61	...	3,600	EMD
	3	...	4,200	EMD
	6	...	2,000	EMD

(Continued on page 86)

*Includes Missouri Pacific, Missouri-Illinois, Texas & Pacific and Chicago & Eastern Illinois

REDUCE STRESSES AND CENTER PLATE FAILURE WITH C-PEP

Rail dynamics researchers now agree that freight car sway produces high stresses in truck bolsters and body center plates—a clue to most center plate failures.

Several years ago, we set out to stabilize the freight car's "ride with danger" and created a fail-safe shock absorbing system that effectively broadens the car-to-truck contact area. We call this system C-PEP.

This breakthrough means thousands of dollars in maintenance savings for railroads. C-PEP drastically reduces center plate wear and practically eliminates center plate metal fatigue and fracture.

C-PEP has highballed on more than 10,000 AAR-approved 100-ton cars since 1967 without a single wheel lift-off derailment! Wear on bolster gibs and side frames of cars with more than 250,000 miles has been only nominal.

C-PEP not only controls low-speed track negotiation; it also reduces truck hunting, permitting higher speeds, even for empty cars.

Simple, inexpensive and easy to install, C-PEP requires no post-application adjustments.

"Talk to the man from Barber"

BARBER STANDARD CAR TRUCK COMPANY

332 S. MICHIGAN AVENUE, CHICAGO, ILLINOIS 60604, U.S.A.
CABLE: CARTRUCKS

Barber Products are designed and engineered exclusively by Standard Car Truck Company, and are available under license in Australia, Belgium, Canada, Japan, Mexico and South Africa.

Circle 39 on coupon page 57

1972 LOCOMOTIVE ORDERS

Purchaser	No.	Type	Horsepower	Builder
Terminal Railroad Assn. of St. Louis.	6	B-B	1,500	EMD
Texas, Oklahoma & Eastern	1	B-B	2,000	EMD
State of New Jersey	9	C-C	3,400	GE
Texas Utilities	2	B-B	1,800	GE
Union Railroad . . .	5	B-B	1,500	EMD
Union Pacific	30	C-C	3,000	GE
	60	C-C	3,000	EMD
U.S. Pipe	4	B-B	1,500	EMD
Various Industrial	17	. . .	55 to 1050	Plymouth Locomotive Works
Vermont Railway	1	B-B	2,000	EMD
Western Pacific . . .	15	B-B	2,250	GE
Weyerhaeuser	1	B-B	1,500	EMD
Yankeetown Dock.	2	C-C	2,000	EMD

1972 LOCOMOTIVE ORDERS-FOREIGN

Purchaser	No.	Type	Horsepower	Builder
Algeria-Societe Nationale des Chemins de Fer Algeriens	25	C-C	3,000	EMD
Angola-Bengula . . .	10	C-C	2,000	GE
Argentina.	60	. . .	2,475-2,250	EMD
	20	. . .	1,650-1,500	EMD
Banner International	19	. . .	66 to 790	Plymouth Locomotive Works
Brazil-Cia Vale Do Rio Doce	9	D-D	3,600	EMD
	4	C-C	2,700	EMD
Egypt-Egyptian Railways	18	C-C	2,000	EMD
Greece	13	B-B	950	GE
	20	C-C	2,700	MLW
Iran-Iranian State Railways	18	C-C	3,000	EMD
Mali-Regie du Chemin de Fer du Mali	2	C-C	1,500	EMD
Mexico-National Railways of Mexico	60	B-B	1,500	EMD
	6	C-C	3,000	EMD
	8	C-C	3,600	MLW
Mexico-Sonora Baja California . . .	3	B-B	3,000	EMD
Mexico-Unidos del Sureste	3	B-B	2,000	EMD
	4	C-C	3,000	EMD
Portugal	20	C-C	2,000	MLW
South Africa-SAR . .	20	B-B	600	GE
	20	C-C	1,500	GE
	100	C-C	2,600	GE
Yugoslavia	15	C-C	1,800	Diesel Division, General Motors of Canada
	37	C-C	1,800	Diesel Division, General Motors of Canada
	58	C-C	2,000	Diesel Division, General Motors of Canada
Zambia-Anglo American Corp. . .	5	B-B	1,000	EMD

1972 FREIGHT-TRAIN CAR ORDERS-CANADA

Purchaser	No.	Type	Capacity	Builder
British Columbia Railway . . .	1085	Box	162,000	National Steel
	200	Wood Chip	163,000	National Steel
	50	Gondola	200,000	National Steel
	25	Cov. Hopper	200,000	Procor
	10	Caboose	57,800	Co. Shops
Canadian General Transit Co. .	38	Tank	200,000	Hawker Siddeley
	59	Tank	140,000	Hawker Siddeley
Canadian National	125	Tri-Level Flat	140,000	Marine Industries
	440	Box	140,000	National Steel
	300	Box	200,000	National Steel
	54	Ore	200,000	National Steel
	115	Container Flat	200,000	Marine Industries
	75	Caboose	100,000	Co. Shops
CP Rail . . .	40	Caboose	. . . . .	Co. Shops
	125	Box	140,000	Pullman-Standard
Canadian Wheat Board	500	Cov. Hopper	200,000	Marine Industries
	700	Hopper	200,000	Hawker Siddeley
Iron Ore Company Of Canada .	500	Ore	227,000	Marine Industries
	66	Ore	200,000	National Steel
North American Car (Canada) Ltd.	100	Hopper	200,000	Hawker Siddeley
	35	Hopper	140,000	Hawker Siddeley
Ontario Northland. .	25	Bulkhead Flat	140,000	Marine Industries
Quebec Cartier Mining Co.	130	Ore	200,000	Marine Industries
Various	400	Tank	various	Procor Ltd.
	155	Misc.	200,000	Procor Ltd.

1972 LOCOMOTIVE ORDERS, CANADIAN DOMESTIC

Purchaser	No.	Type	Horsepower	Builder
Algoma Central . . .	3	C-C	3,000	General Motors
British Columbia. . .	14	C-C	3,000	MLW
	8	B-B	2,000	MLW
Canadian National. .	61	. . .	2,000	General Motors Canada
	50	B-B	2,000	General Motors Canada
	30	B-B	2,000	MLW
Government of Ontario Transit. . .	4	B-B	3,000	Diesel Division, General Motors of Canada
Iron Ore Company of Canada	3	B-B	1,200	Diesel Division, General Motors Canada
Ontario Northland. .	5	C-C	3,000	General Motors
Quebec Cartier Mining	3	C-C	3,600	MLW
Quebec North Shore & Labrador .	40	C-C	3,000	Diesel Division, General Motors Canada

1972 FREIGHT-TRAIN CAR ORDERS-CANADIAN FOREIGN

Purchaser	No.	Type	Capacity	Builder
Mexican Railways. . . .	9	Tank	140,000	Hawker Siddeley
Zambia Railways . .	100	Box	100,000	Hawker Siddeley

RAILROAD SIGNALING INSTALLED IN 1972

Railroad	Highway Grade Crossings Protected by: Flashing-light signals	Flashing-light signals & gates	Block Signals & Traffic Control: Road Miles	Switches	Electric Locks	Signals	Train Stops Cab Signals	Safety Detectors	Miscellaneous Signal Units
Alaska	5	–	–	–	–	–	–	–	–
Algoma Central	19	1	–	–	–	–	–	–	–
Atlanta & St. A. Bay.	1	–	–	–	–	–	–	–	–
A&WP, WRA, Ga.	–	1	–	–	–	–	–	1	–
BAR	3	–	–	–	–	9	–	–	–
B&LE	2	1	–	1	3	4	–	1	36
B&M	6	2	–	–	–	–	–	2	83
British Columbia	6	–	–	–	–	–	–	–	–
BN	49	46	41	19	22	92	–	32	–
CN	141	20	260	120	40	308	–	46	411
CP Rail	61	5	11	7	2	19	–	–	30
C&O	30	10	6	9	5	18	–	6	11
B&O	–	–	–	–	–	–	–	15	2
C&NW	50	4	–	–	–	–	–	2	1
C&WI	–	–	–	–	–	–	–	–	18
CTA	–	–	2	–	–	4	10 TS	–	10
Clinchfield	–	–	1	1	2	4	–	–	–
D&RGW	8	2	–	5	5	–	–	31	23
DT&I	3	1	–	–	–	–	–	1	5
AA	3	–	16	–	–	16	–	–	7
DM&IR	1	–	–	–	–	–	–	3	38
EJ&E	–	3	–	–	–	2	–	–	19
EL	7	4	2	–	3	4	–	5	10
FEC	10	15	–	–	–	–	–	–	–
Frisco	18	2	–	–	–	–	–	20	24
ICG	42	8	8	4	4	11	–	12	1
KCS	5	1	107	9	14	71	–	20	–
LV	2	1	20	2	8	13	–	–	–
L&N	19	3	4	2	1	12	–	2	–
MEC	3	2	–	–	–	–	–	–	1
MTA-LI	–	36	–	–	–	–	–	–	6
NYCTA	–	–	2	–	–	7	6 TS	–	36
Milwaukee Road	39	8	–	–	–	–	–	–	3
MKT	14	2	–	–	–	–	–	–	6
MP	40	9	–	–	–	–	–	40	3
C&EI	7	3	67	5	10	42	–	6	–
T&P	14	4	–	–	–	–	–	2	–
Com. TCU Montreal	–	–	1	–	–	3	–	–	–
NS	2	–	–	–	–	–	–	–	–
N&W	22	5	201	24	47	146	–	6	49
ONL	1	–	–	–	–	–	–	–	–
PC	54	34	40	10	8	22	–	49	118
PATH	–	–	–	–	–	2	2 TS	–	7
QNS&L	–	–	–	4	–	12	–	11	4
Reading	–	–	–	–	4	–	–	–	6
RF&P	2	–	–	–	–	–	–	–	4
Rock Island	20	9	–	–	2	–	–	8	2
Santa Fe	54	33	71	–	–	–	–	10	–
SCL	30	45	45	23	20	83	–	42	10
Soo Line	10	1	–	1	6	–	–	1	–
Southern	40	10	54	14	19	40	–	23	95
SP	59	219	–	–	–	–	–	23	1
TP&W	2	–	–	–	–	–	–	–	–
TTC	–	–	3	–	–	30	73 TS	–	86
UP	22	34	–	–	–	–	100 CS	6	55
WM	1	–	–	–	–	–	–	–	32
WP	3	7	–	–	–	–	–	2	–
Totals	930	591	962	260	225	974	191	428	1,253

RAILROAD COMMUNICATIONS INSTALLED IN 1972

Railroad	Radio Units	Intercommunications: No. of Systems	Loudspeakers & Telephones	Channelizing Equipment: Carrier Units Terms. & Rep.	Data Sets	Telephone: Exchanges	Stations Available	Computer I/O units	ACI Scanners	Microwave Stations
Algoma Central	64	–	–	4	–	1	100	–	–	–
Atlanta & St. A. Bay.	1	–	–	–	–	–	–	–	–	–
A&WP,WRA, Ga.	–	–	–	–	11	–	–	–	–	–
BAR	14	–	–	–	–	–	–	–	–	–
BRC	6	–	–	–	–	–	–	16	–	–
B&LE	14	1	6	–	–	–	–	–	–	–
B&M	42	2	12	14	–	–	–	–	–	–
British Columbia	143	–	–	36	5	4	400	–	–	–
BN	206	2	100	70	200	–	–	30	–	–
CN	1,584	–	–	1,266	220	5	500	378	14	–
CP Rail	–	–	–	–	–	–	–	–	10	–
C&O/B&O	164	4	14	14	15	–	–	15	17	–
C&NW	205	1	22	70	44	–	–	–	–	1
CTA	504	–	20	–	2	–	–	6	–	–
Clinchfield	70	–	–	–	–	–	–	–	–	–
D&H	1	–	–	–	–	–	–	–	–	–
D&RGW	97	–	–	–	–	–	–	–	–	2
DT&I	14	1	1	–	–	–	–	–	–	–
AA	7	–	–	–	–	–	–	–	–	–

(Continued on page 88)

RAILROAD COMMUNICATIONS INSTALLED IN 1972

Railroad	Radio Units	Intercommunications: No. of Systems	Intercommunications: Loudspeakers & Telephones	Channelizing Equipment: Carrier Units Terms. & Rep.	Channelizing Equipment: Data Sets	Telephone: Exchanges	Telephone: Stations Available	Computer I/O units	ACI Scanners	Microwave Stations
DM&IR	—	—	—	—	11	—	—	10	—	—
EJ&E	16	—	—	—	1	—	—	9	8	—
EL	7	2	8	17	—	—	—	—	—	—
FEC	—	—	—	—	—	—	—	—	1	—
Frisco	94	1	45	8	—	—	—	—	—	—
GB&W	4	—	—	—	—	—	—	—	—	—
ICG	410	—	1	50	30	—	—	10	—	5
KCS	79	2	35	—	15	—	—	—	9	4
KCT	2	—	—	—	—	—	—	—	—	—
K&IT	13	—	—	—	—	—	—	—	—	—
LV	2	—	—	—	—	1	30	—	—	—
L&N	70	7	114	29	8	1	40	7	2	—
MEC	8	—	—	—	—	—	—	—	—	—
MBTA	589	30	600	8	—	—	—	2	4	—
MTA-LI	92	3	240	6	—	—	—	—	—	—
NYCTA	1,144	1	6	104	—	—	—	—	—	—
Milwaukee Road	51	4	32	1	—	1	20	3	—	—
MKT	14	—	—	—	—	—	—	—	—	—
MP	170	5	70	—	30	—	20	30	—	8
C&EI	40	—	—	—	3	—	—	3	—	—
T&P	36	1	10	—	7	—	—	7	—	15
Com. TCU Montreal	9	27	153	—	—	—	—	—	—	—
NS	22	—	—	—	—	—	—	—	—	—
N&W	591	—	—	2	29	—	—	24	1	—
ONL	15	—	—	77	—	—	—	1	—	—
PC	194	1	5	—	—	—	—	—	—	—
PATH	65	11	89	—	—	—	—	—	—	—
QNS&L	22	—	—	—	—	—	100	—	—	—
Reading	9	—	40	—	—	—	—	2	—	—
RF&P	98	—	7	2	3	—	—	3	—	—
Rock Island	73	—	—	46	2	2	30	7	—	—
Santa Fe	4	—	—	—	—	2	—	—	10	10
SCL	174	—	—	27	—	1	100	—	—	—
Soo Line	89	—	—	—	—	1	80	—	2	—
Southern	248	4	175	463	103	—	100	150	—	19
SP	545	—	—	104	85	1	59	13	16	10
TP&W	3	—	—	—	—	—	—	—	—	—
UP	313	5	2	44	10	5	476	9	—	17
WM	—	1	2	4	5	—	—	5	—	—
WP	87	—	—	62	—	—	—	—	—	8
Totals	8,538	116	1,809	2,528	839	25	2,055	740	96	99

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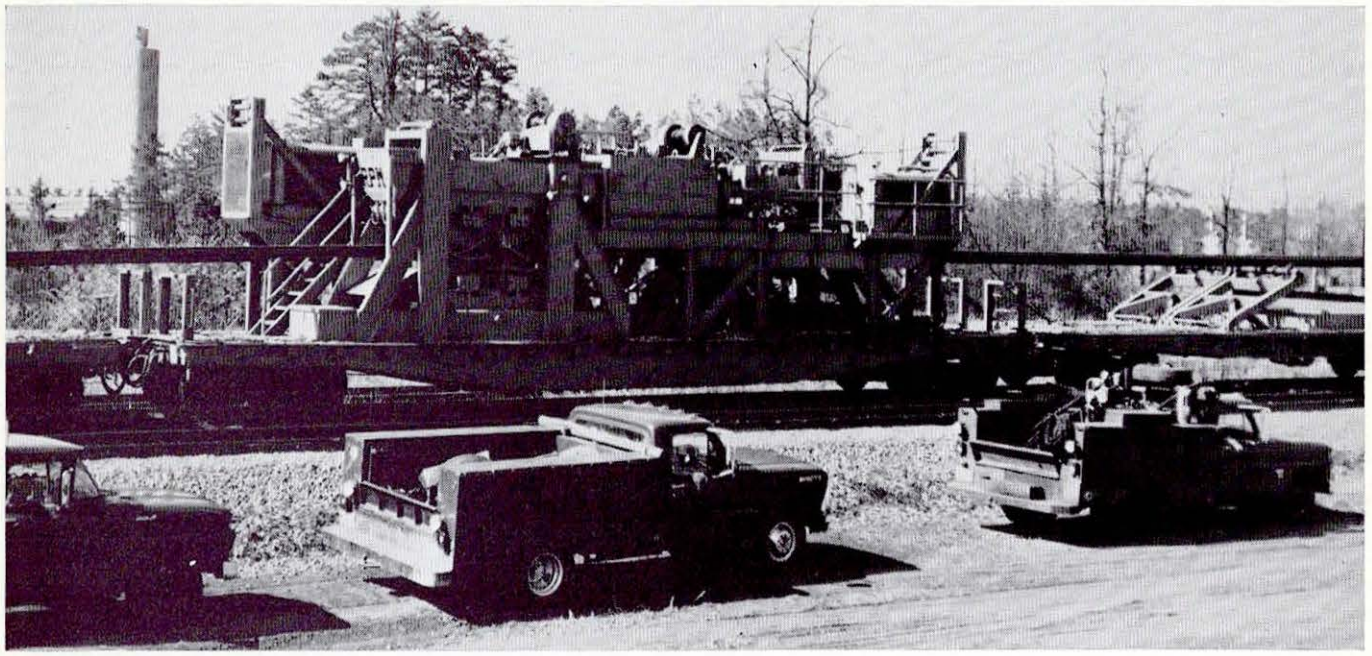
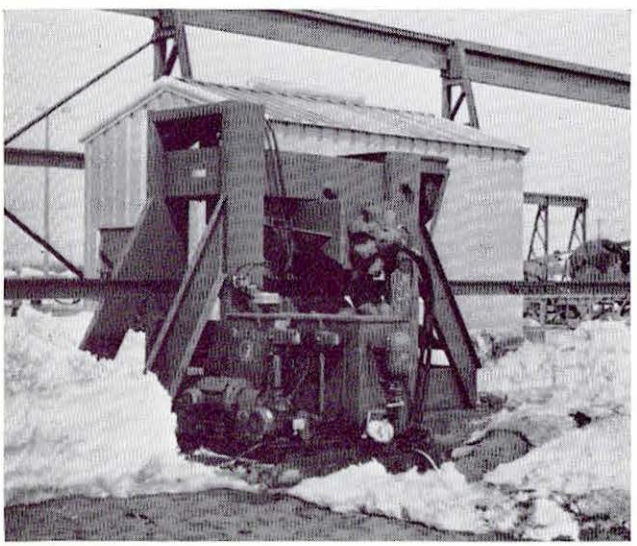
Circle 37 on coupon page 57

For fast, economical unloading or pick-up of rail strings (welded or bolted) we offer . . .



THE DAVIDSON-KENNEDY MOBILE RAIL-HANDLING SYSTEM

Using this system, and with only one operator, you can pick up or unload two strands of rail in lengths of up to 2000 ft.
LOW MAINTENANCE **HIGH SPEED**



Other Davidson-Kennedy Products

- Stationary Hydraulic Rail Pushers (left). Handle CWR into racks or onto cars.
- Automated Rail Dismantlers. Remove bolts, etc., from jointed strings.
- Specialized Machinery for the Railroad Industry.

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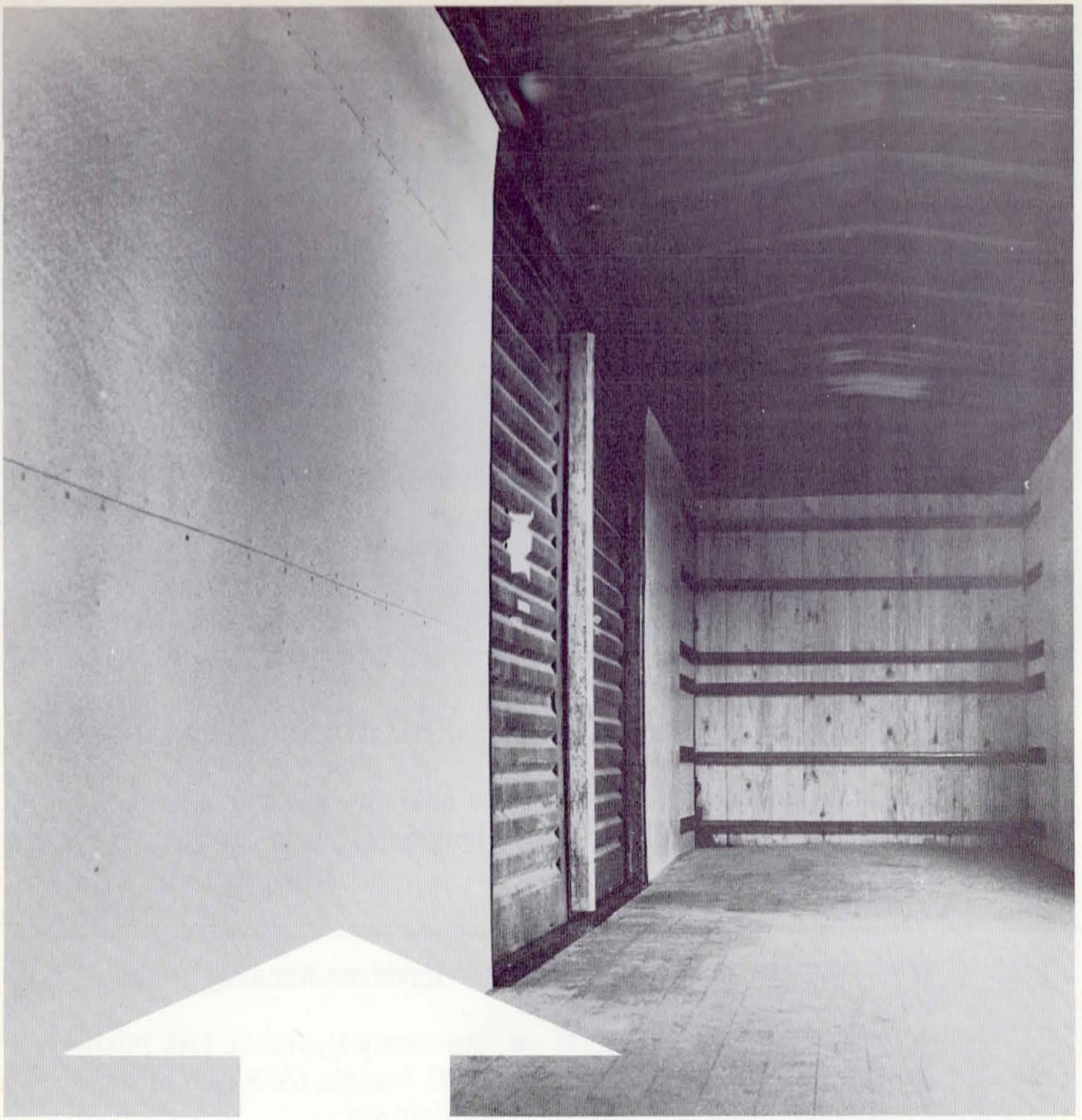
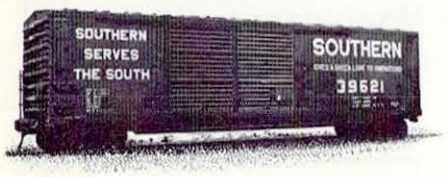
Circle 47 on coupon page 57



GLASBORD® CARPET CAR LINING



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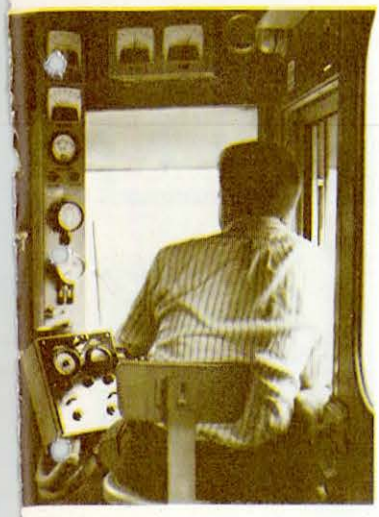
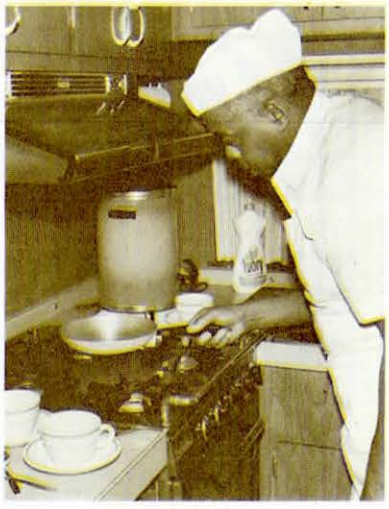
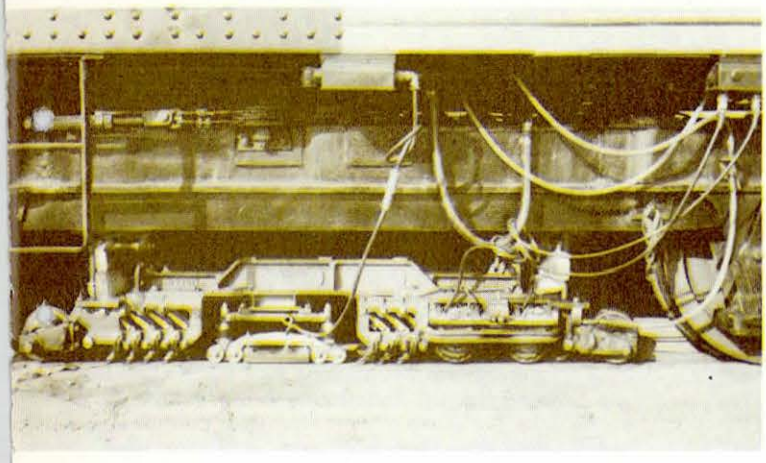
Circle 41 on coupon page 57 ▶







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At Sperry Rail Service, our detector car technology is a forward moving force as it was when we first started looking for rail defects. Last year we added two new cars to the fleet and completely modernized three others . . . from the test carriage to the instrument consoles, from the galley to the crew's quarters. Further refinement of induction and ultrasonic test equipment provides even greater detection accuracy.

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Hollamer hose supports don't break.

In actual tests, a pulling force of 378 lbs. separated a standard S-hook yet only stretched the Hollamer support about an inch. It's been stretched more than twice its length without breaking. And snapped back immediately to its original length when pressure was relieved.

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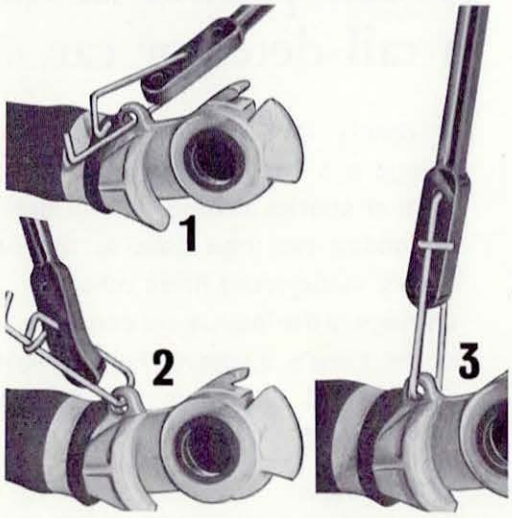
The Hollamer hose support. Part of Holland's car protection plan. A small investment to save a big one.

Installs in seconds.



Use identical procedure to attach to coupler

* Patent applied for
AAR approved for 50,000 units

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(514) 481-8107

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Circle 42 on coupon page 57

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Maneuverability and dependability!
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These vehicles offer high lifting capacity, maneuverability and versatility with less manpower and lower operating expense!
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For moving men, equipment . . . add the versatility of on-rail transportation with Ryd-A-Rail conversion units.

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Circle 44 on coupon page 57

Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended Jan. 6 totaled 425,366 cars, according to the Association of American Railroads. This was an increase of 34,052 cars, or 8.7%, compared with the previous week, and a decrease of 4,236 cars, or 1.0%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended Jan. 6 are estimated at 13.0 billion, an increase of 1.3% above the corresponding week of 1972.

REVENUE FREIGHT CARLOADINGS

Commodity	Jan. 6 week	Dec. 30 week
Grain	27,267	26,874
Farm products	12,589	16,311
Metallic ores	22,452	25,662
Coal	70,665	64,240
Crushed stone, gravel & sand	17,743	15,481
Nonmetallic minerals	9,538	7,336
Grain mill products	19,779	15,652
Food and kindred products	18,983	20,827
Primary forest products	19,203	16,053
Lumber & wood products (except furniture)	14,297	12,243
Pulp, paper & allied products	20,430	15,504
Chemicals & allied products	24,662	23,057
Petroleum products	9,602	8,951
Stone, clay & glass products	15,573	14,241
Coke	7,622	6,401
Metals & products	23,858	21,391
Motor vehicles & equipment	19,716	14,103
Waste & scrap materials	11,953	10,269
Forwarder & shipper assn. traffic	4,777	5,275
All other carloads	54,417	50,871
LCL traffic	240	273
Total cars loaded	**425,366**	**391,015**
Cumulative total, 52 weeks	1972	1971
	26,061,246	25,265,569
Estimated revenue ton-miles (billions) 52 weeks	780.7	739.7

PIGGYBACK LOADINGS

U.S. piggyback loadings for 1972 totaled 1,330,932 cars, 11% higher than the 1,199,137 cars loaded in 1971. Piggyback loadings for the week ended Dec. 30 totaled 21,631 cars, 11.9% above the comparable week of 1971, and 36,962 trailers or containers, up 18.9% over 1971. The Dec. 30, 1972, week included the Christmas holiday, while the corresponding week of 1971 included the New Year's holiday.

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
Dec. 21, 1972	4,429,229	207,718,823
Dec. 21, 1971	3,703,030	207,548,700

● *Freight-car orders and deliveries.*—The following report has been received from the AAR and the ARCI:

DELIVERED

	Nov. 1972	Oct. 1972	Nov. 1971
Built new by carbuilders	3,557	3,487	4,026
Built new in R.R. shops	412	644	113
Built new—total	3,969	4,131	4,139
Rebuilt	218	282*	404
TOTAL DELIVERED	**4,187**	**4,413***	**4,643**

ORDERED

To be built new by carbuilders	4,957	3,116	3,418
To be built new in R.R. shops	400	200	100
To be built new—total	5,357	3,316	3,518
To be rebuilt	600	0	200
TOTAL ORDERED	**5,957**	**3,316**	**3,718**

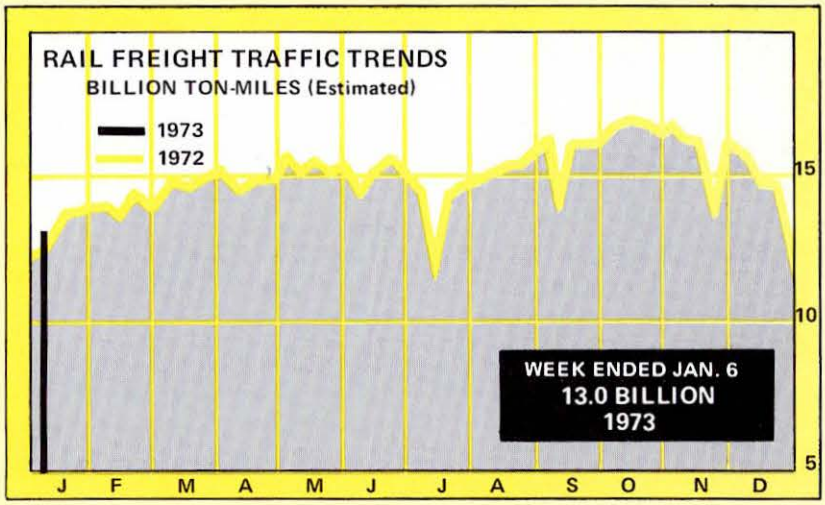
ON ORDER AND UNDELIVERED

	Dec. 1, '72	Nov. 1, '72	Dec. 1, '71
To be built new by carbuilders	17,314	16,010	21,789
To be built new in R.R. shops	3,800	3,812	3,424
To be built new—total	21,114	19,822	25,213
To be rebuilt	1,875	1,493	1,788
TOTAL ON ORDER	**22,989**	**21,315**	**27,001**

*Revised

● *Amtrak.*—Ordered a STAR system (for monitoring, analyzing and forecasting telephone trunking and work-force requirements) from the Control Systems Division of Applied Data Research, Inc.

● *Union Switch & Signal Division, WABCO.*—Received an order for over $4 million from Pullman-Standard for automatic train control equipment to be installed on 752 R-46 rail transit cars being built for the New York City Transit Authority. The equipment will provide cab signals, train over-speed protection, train speed regulation, programmed station stopping, and an 81-channel Identra train identification for automatic routing.



Source: Association of American Railroads

LETTERS

Railroad marketing

Milwaukee, Wisconsin

To the Editor:

I read with interest the rail marketing approach outlined by Mr. George Wallace of the Penn Central in your December 25 issue. As a Penn Central customer we have recently seen positive evidence of their progressive marketing in regard to our traffic encompassing both rates and equipment.

However, I must vigorously disagree with Mr. Wallace's statement that, "Only the desperate customer will tell his supplier everything. The essence of successful buying is to mask some part of the value to the user of what is bought."

It is the policy of the Jos. Schlitz Brewing Company Traffic Division that we provide our carriers with all of the information available and we do not deliberately mask some part of the value. To do otherwise would not be in the best interest of our carriers or our company in the long run—for in the long run our mutual success is necessary to provide essential transportation for our products. We expect our carriers to make decisions based simply on what is in their own best (profitable) interest.

This policy has resulted in reasonable transportation costs for our products, above average equipment supply, profitable traffic for our carriers and a mutual trust that has built many highly valued working relationships between companies and individuals.

Brian Holtz
Traffic Manager—Rates
Jos. Schlitz Brewing Co.

University Park, Pa.

To the Editor:

Every sentence in George R. Wallace's article on marketing (RA, Dec. 25, p. 26) is first rate. This piece should be required reading for railway officials at all levels.

John C. Spychalski
Associate Professor
Business Administration
Pennsylvania State University

PATCO operations

Philadelphia, Pa.

To the Editor:

Speaking as the Philadelphia transit landlord of four railroad operating tenants of which PATCO is one, we wish to commend you for the fine article on PATCO in your Dec. 11 issue.

We are very proud of PATCO General Manager Robert B. Johnston, and particularly his common-sensical and practical engineering foresight in designing the PATCO line. Not fully mentioned in your article is the fact that with cab signals augmented by wayside signals at interlockings, PATCO trains can operate flexibly up to full 75 mph track speed in either automatic or manual control with full signal protection. Unfortunately this is not a feature of the BART system.

We feel that PATCO, which began operation into Philadelphia in 1969 via our Locust Street Subway, is a far better example of a superior transit system than later developments elsewhere.

Robert M. Stacy
Transit Engineer
City of Philadelphia

Steam vs diesel

Bethlehem, Pa.

To the Editor:

Mr. L.E. Stranger's recent letter (RA, Nov. 27, 1972, p. 64) impressed me as very well put and appropriate.

I once worked for Baldwin and recall very well that some of the efforts to evaluate steam vs. diesel were far less objective than others. I hope Mr. Stranger's remarks may do something to improve the objectivity with which all new developments are judged.

Harold A. List
Professional Engineer

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There's no way a maintenance man can grab the wrong Wix filter for the job. For fast, sure identification, our filters are not only numbered, they are now color-coded—RED... GREEN... and BLUE.

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Circle 38 on coupon page 57

(Continued from page 59)

sales engineer, with responsibility for states east of the Mississippi River and headquarters at 5005 Vernon Oaks Drive, Atlanta, Ga. He formerly was employed by Prime Manufacturing Corp. as eastern sales representative.

T.E. Dancu has been appointed director of engineering. **Thrall Car Manufacturing Co.,** Chicago Heights, Ill. He will be responsible for the design of all cars, and will provide technical liaison with Thrall's railroad and industrial customers.

The Industrial Fastener Division of **Standard Pressed Steel Co.** has been renamed **Cleveland Cap Screw Division.** Headquarters of the division remain at 4444 Lee Road, Cleveland, Ohio.

J. Bernard McKay, market development manager for consumer paints, **E.I. du Pont de Nemours & Company,** Wilmington, Del., has been named national manager, transportation equipment finishes section, succeeding **Frank P. Smith,** who retired Dec. 31, 1972, after 44 years with the company.

On Jan. 1 **American Pamcor, Inc.,** a wholly owned subsidiary of AMP Incorporated, Valley Forge, Pa., officially changed its name to **AMP Special Industries,** a division of AMP Products Corp.

William J. Radcliffe has been named managing director of the new Office of Information Services, **Realco Services Incorporated,** Chicago. Before joining Realco in July, Mr. Radcliffe had been with Intermodal Transportation Systems, Penn Central, and Radio Corp. of America.

INDUSTRIAL TRAFFIC

To better identify their expanded operations, the Transportation Department of the **Merichem Co.,** Houston, Tex., has been renamed the Supply and Distribution Department. **Robert T. Lohman** will continue to manage the enlarged department. **Patrick J. Smith,** supervisor of barge and terminal operations, has been named assistant manager-supply. **William W. Westbrook, Jr.,** supervisor of transportation rates, has been promoted to assistant manager-distribution. **James T. Watson** has been named supervisor of tank car and tank truck operation. **Henry M. Haltom** has been appointed supervisor of customer services, Supply and Distribution Department.

John Kaye has joined the New York based traffic and distribution consulting firm of **Denenholz & Janer, Inc.,** as a senior associate specializing in rate matters. He was formerly assistant general traffic manager, **Bigelow-Sanford, Inc.**

J.L. Quinlan, traffic specialist, Traffic Department, **Marathon Oil Co.,** Findlay, Ohio, has been appointed traffic manager, replacing **A.E. Rectorschek,** manager of the Traffic Department, Purchasing Division, who will retire Feb. 1, after almost 47 years of service.

OBITUARY

W.H. Hutson, manager of domestic routing, Transportation and Distribution Department, **Combustion Engineering, Inc.,** Windsor, Conn., died Dec. 11.

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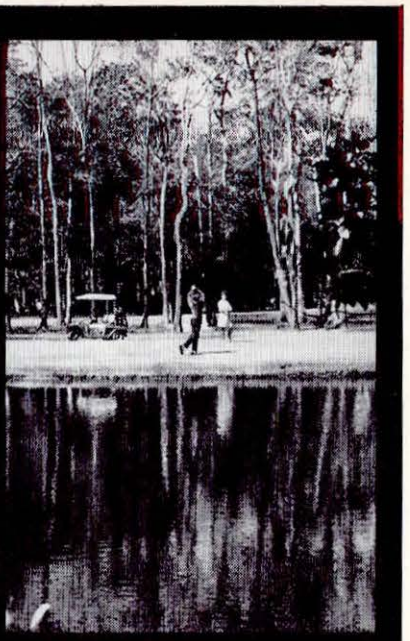

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That's why we'll gladly send you our brochure with 29 Grand Hotel pictures and 2 maps in Point Clear color. You'll see that while we may be off the beaten path, we're well worth getting to. An unspoiled setting with a challenge every golfer should face at least once in a lifetime. Our 3 championship nines with 27 beautiful holes. Outstanding! Surrounded with enough other sports and activities to lure even the most dedicated golfer from the greens.

We offer 500 wooded acres, bay, beach and pool in season, sailing, water skiing, tennis, horseback riding, skeet and trap shooting, quail hunting, deep-sea and freshwater fishing. All with very Grand Hotel accommodations, food, hospitality.

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Grand choice of golf, tennis and family plans 10 months of the year. All-inclusive with room, 2 meals, gratuities, tennis, unlimited free golf and much more. See your travel agent or write: Jim Pope, V.P. & Gen. Mgr., Box 55, Grand Hotel, Point Clear, Ala. 36564. Tel. (205) 928-9201. Planning a meeting? Send for our Grand Conference Brochure.

PROGRESS REPORT

SPENO

Here are the up-to-date facts on the SPENO Ballast Cleaning and the SPENO Rail Grinding Services.

BALLAST CLEANING
SPENO Engineering and Research has developed a superior screening arrangement so that we are now using an improved Ballast Cleaner with greater efficiency.

RAIL GRINDING
Our Rail Grinding Service has been so well received we are now building a *FIFTH* Rail Grinding Train to take care of the increased demand.
SPENO is constantly developing means for better service to make sure that the Railroads receive everything they pay for — and more.

"Just Ask the Railroads That Use Our Services"

Frank Speno Railroad Ballast Cleaning Company, Inc.
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Clark St. East Syracuse, New York Box 219 13057

MEMBER RPI

Speno International, S. A.
22 Parc Chateau Banquet, Geneva, Switzerland
(For Rail Grinding Outside the North American Continent)

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Circle 45 on coupon page 57

Train Billing Repair Card Write-Up Men

How many Repair Cards are rejected each month? To reduce that number, sign up for our new home study course for Write-Up Men.

This course consists of fifteen lessons as follows:

1. **Purpose of the Rules of Interchange and Care of Foreign Cars.**
2. **Air Brake Equipment.**
3. **General Regulation for Lubrication.**
4. **Components of Journal Box.**
5. **Roller Bearings, Adapters and Cartridge Bearings.**
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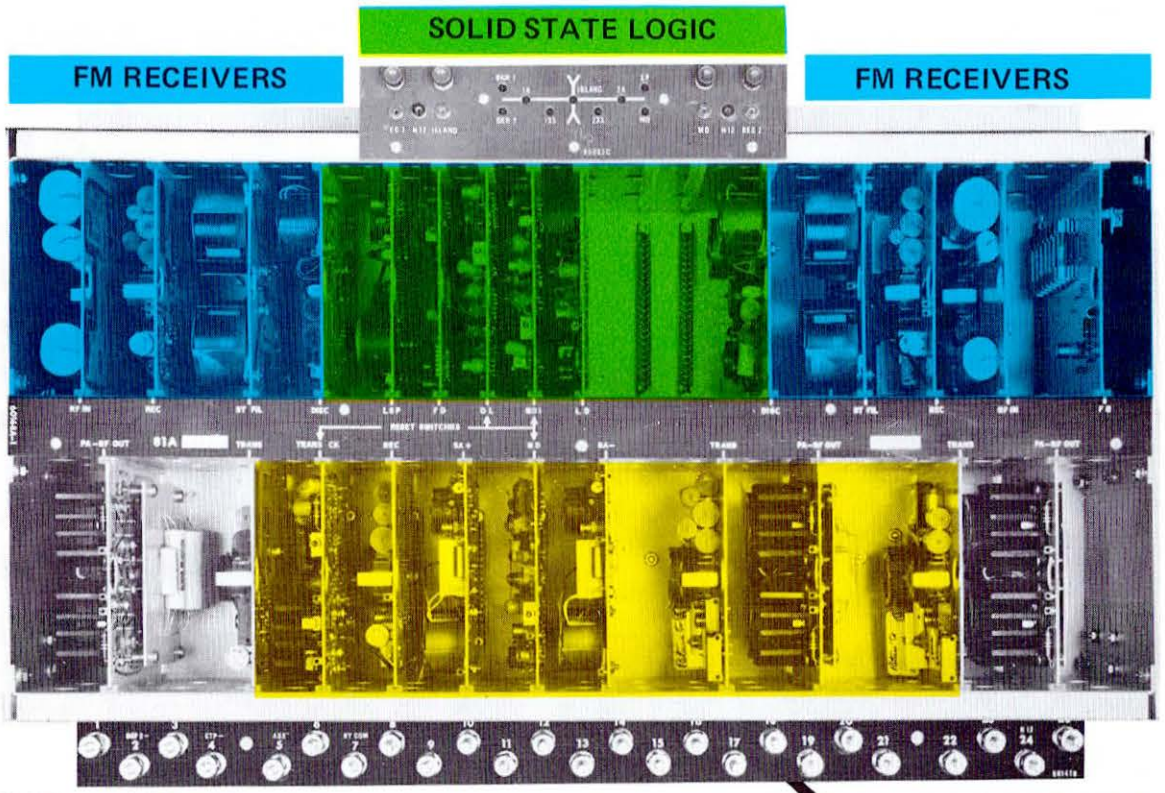
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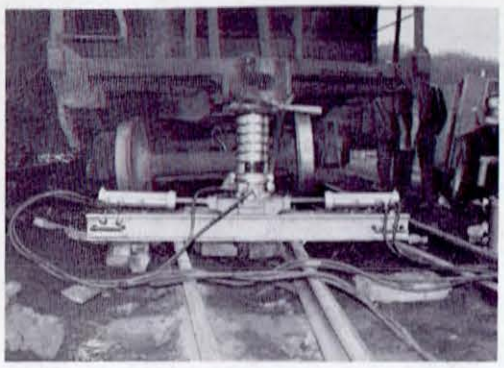

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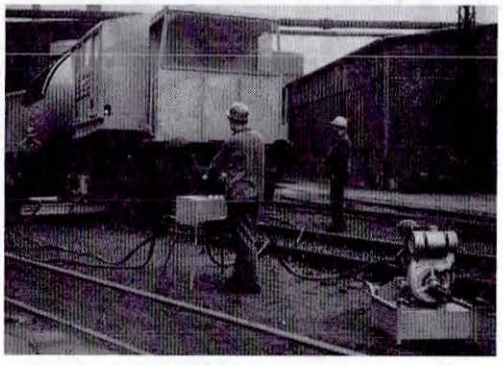

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